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# ARCHAEOLOGY

A MAGAZINE DEALING WITH THE ANTIQUITY OF THE WORLD

VOLUME 10 NUMBER 3

SEPTEMBER 1957

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SHE SAT THERE making a stone mortar. Quietly and methodically she struck and rubbed stone against stone. The stone which would become the mortar was a dense basalt cobble nearly ten inches in diameter. The wedge-shaped rock which she used to rub and peck away at the mortar was of convenient size for her hand. The stone mortar was nearly finished. The old Wishram woman stood up and looked at me. She spoke:

"White man kill everything . . . kill all Indian. Once many houses, many fires, many old people, many young people." She spread her arms apart and pointed in all directions saying, "All dead now, all gone, everything. Go 'way." She had spoken in broken English, but the message her words conveyed was brilliantly clear. Not only the old woman's home but a number of significant archaeological sites were inundated by a twenty-six-mile-long "slack water" reservoir resulting from closure of the Dalles Dam in March 1957. Just five years earlier the federal government had begun the construction of this huge dam on the Columbia River, a few miles upstream from the city of The Dalles, Oregon. Among the sites now inundated are the famous

"Long Narrows" of the Columbia River and Celilo Falls, both described in the journals of Lewis and Clark on their trek down the Columbia in 1805. Along the shores of these natural breaks or barriers in that mighty river, where the salmon had to swim hard and leap high to reach their spawning grounds in the upper tributaries, the Indian has left evidence of his art and way of life which may date back beyond 7500 B.C.

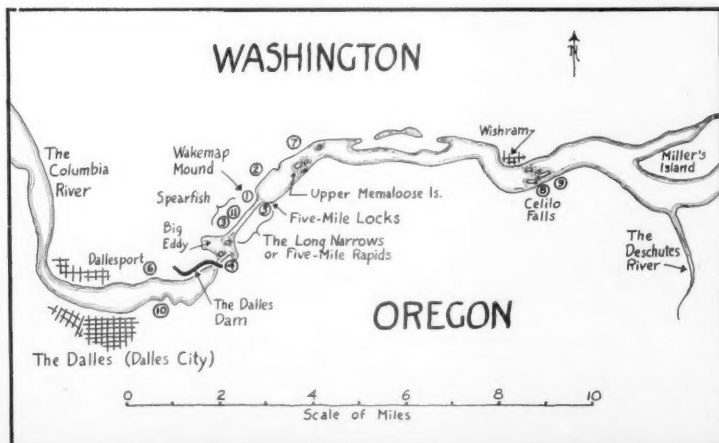
One of the sites has been known to us since 1805. In October of that year Lewis and Clark described what we now call Wakemap (an anglicized version of wuq! Emap or wûq' mûp, Chinookan words meaning "ogress" or "old woman") as a mound of apparently artificial construction some thirty feet above the common level, with remains of houses upon it. It is located on the north shore of the Columbia at the upstream end of the Indian village of Spearfish, Washington. The first modern investigation of Wakemap Mound was undertaken in 1924-26 by William Duncan Strong, W. Egbert Schenck and Julian Steward. They partially excavated the mound and a number of other sites in the area, which they called the "Dalles-Deschutes Region." The results

# ART OF THE LOWER COLUMBIA VALLEY

may be seen in their joint publication, *Archeology of the Dalles-Deschutes Region* (1930). It was nearly twenty-seven years later when the next really scientific work was done at the mound and in the Dalles-Deschutes region in general. The year construction work began on the Dalles Dam a Smithsonian Institution River Basin Survey was made. The survey was confined to the reservoir area proper; it did

The Dalles Reservoir area. The numbers show approximate locations of major sites.

Key to map: 1) Wakemap Mound, 2) Over and Lois sites, 3) Congdon site, 4) Big Eddy site, 5) Five Mile Lock site, 6) Airport site, 7) Hundred Mile Camp site, 8) B. Stewart site, 9) Big Leap site, 10) Dalles Bridge site, 11) Indian Well site.

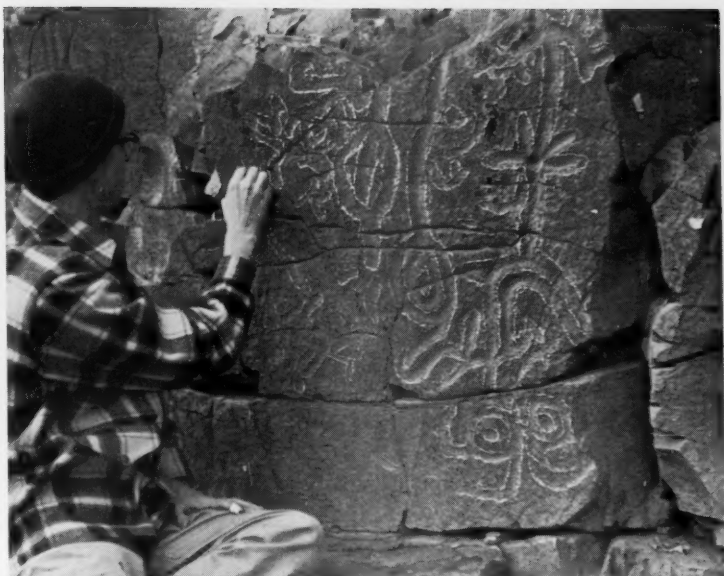




By B. ROBERT BUTLER

*Archaeologist-in-Charge,  
The Wakemap Project*

• In its early phases (May 1955-March 1956) the Wakemap program was generously supported by the Wasco County-Dalles City Museum Commission and many citizens and civic clubs of The Dalles, Oregon. Between March and July 1956 the work was entirely supported by an Agnes Anderson grant obtained through the efforts of Dr. Douglas Osborne, Curator of Anthropology, Washington State Museum, who has been advisor for the project throughout. The later phases of the program (July 1956-February 1957) were made possible by the United States National Park Service. Thanks are also due to the Oregon Archaeological Society. Many important artifacts were found by members of that society.



Chalking the edges of a complex petroglyph prior to recording and photographing.

not include areas which would be torn up by the relocation of railroads and other such installations, and much good material was lost through this oversight. No new sites were reported for the Washington shore of the reservoir. Wakemap Mound was still a key site.

While the Dalles Dam was under construction, and before the creation of the slack water pool, archaeologists from the Universities of Oregon and Washington gathered as much as they could of the evidence left by the Indians. Many of the more promising sites in the Dalles Reservoir were partially excavated and thousands of artifacts recovered. A large proportion of the several thousand rock carvings, or petroglyphs, which abound in the area was also recorded and photographed.

Among the artifacts which have been recovered are some extraordinarily well planned and executed sculptures in antler and stone which have artistic merit. Certainly the time, labor and mastery of

technique entailed in the making of some of these objects can only be interpreted as an interest in form and embellishment beyond that required for purely utilitarian purposes. The accumulated evidence suggests a long and fascinating history for that art and its creators.

In broad outline, it is a history of perhaps more than ten thousand years of almost continuous settlement in the reservoir area. It is a history characterized by rather gradual and generally progressive cultural growth based on a hunting, fishing and food-gathering economy developed within a relatively stable environment. It is also a history of gradually shifting cultural affiliations with an occasional marked change in population make-up. In cultural affiliation the most notable shift appears to have been from a predominantly Great Basin, Southwestern-Archaic California cultural base to that of a more northern Northwest Coast base. The Dalles Reservoir region has long been considered of crucial

importance in Northwest Coast-Interior Plateau cultural relations. By those particularly concerned with the movement of populations into and within the Pacific Northwest, the reservoir is considered a key geographical point in any theoretical formulation of those movements.

The Dalles Reservoir site was occupied by the Wishram Indians on the north shore of the Columbia River, probably almost to Celilo Falls, while the Wasco lived just opposite, on the south shore. The Wishram and Wasco were the Chinookan-speaking peoples who lived farthest upstream. Until they were decimated by diseases introduced by Europeans, they occupied both shores of the Columbia River downstream as far as its mouth. Immediately upstream and to the north and south of the Wishram and Wasco were the Sahaptian-speaking peoples, such as the Klikitat, who became the "Arabs" of the Pacific Northwest after the horse was introduced about 1730.



Three carvings from the latter part of the Late period (1600-1800). Left: antler carving depicting a flat-headed woman, from site No. 8 near Celilo Falls. Height  $1\frac{1}{8}$  inches. Center: calcined antler carving from the Over site. Height  $1\frac{7}{16}$  inches. Right: bone carving. Although found at a cremation site seventy miles south of the Reservoir, it is similar to Tsagiglalal. Height  $\frac{7}{8}$  inch.

## ART OF THE LOWER COLUMBIA VALLEY

*continued*

The Chinookans were primarily a river people before the settlement of Europeans in the Columbia Valley. They caught great quantities of salmon with harpoons, leisters, spears and nets; the salmon were smoked, dried and pounded with berries into "pemmican" bales which were traded for slaves and other goods. The position of the Wishram and Wasco astride the major portages around the Long Narrows gave them virtual command over traffic between the coast and the interior along the Columbia River. The ease of obtaining food and the control of commerce along the river, combined with a pleasant climate, made this a

gambling mecca and slave trading center second to none in the area.

What we know of these people may be only a pale image of their recent past, for the present Indians remember only that part of their culture which survived the initial period of contact with Europeans. The tragedy of these once prosperous people was that they had no resistance to European diseases. It has been said that during one of the plagues which swept along the lower Columbia the screams of the dying and the wailing for the dead could be heard for miles.

What was the immediate past of the Wishram and Wasco in terms of the archaeology of the Dalles

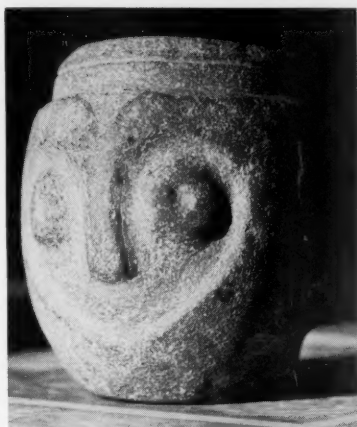
Reservoir, and what do we know of its prehistory in general? For convenience I have divided the prehistory of the Dalles Reservoir area into three major periods, each having a distinct configuration of cultural traits. The chronology suggested for the onset and termination of the periods is based, wherever possible, on Carbon-14 dates available from sites in the area. Carbon-14 dates for the Late period were obtained from the two Wakemap Mound components. Wakemap I has an early date of 1090 (or 1080)  $\pm$  200 years before the present and a terminal date of 530  $\pm$  200 years B.P. Carbon-14 dates are also available for the Early period. These, based on material from the Five Mile Lock site on the Oregon shore, opposite Wakemap Mound, run from over 9000 years B.P. to 6000 years B.P.

The Late period probably began around A.D. 500 and terminated about 1830. The accomplishments of this period were spectacular. During this time the Chinookan-speaking population may have arrived from downstream. Cultural

developments which had been moving down the Northwest Coast were now blended with local culture and with manifestations of the Greater Southwestern culture area. A Desert Culture tradition, already fused onto an Early Riverine base, now became united with distinctly coastal traditions. Long-standing cultural commerce with the interior plateau continued.

From its very beginning the Late

period was characterized by three outstanding features: well developed fishing equipment, square or rectangular semi-subterranean winter houses, and sophisticated art styles. The fishing equipment included net shuttles with open ends, rectangular net gauges of horn or antler, compound harpoons, harpoon points of antler with lateral line guards and a variety of other harpoon forms. Evidently the



Front and back views of a small stone mortar in the form of a highly conventionalized human head. From the Late period, about 1400. Height  $4\frac{1}{2}$  inches.



Three views of one of the finest antler carvings ever to be recovered in the Pacific Northwest (Late period, 1600-1800). This carving was found at the Over site, a cremation site in Spedis Valley, on whose downstream edge Wakemap Mound is located. Note the combination of design motifs. The "joints" are depicted in typical Northwest Coast fashion; the circle and dot motif and the triangle motif are typical Plateau design elements; the ribbed figure and grinning face motif are typical of the lower and middle Columbia Valley. Height  $3\frac{1}{8}$  inches.



Fragmentary stone mortar carved in the form of a human head, dating 1600-1800. The lips were painted with red ochre, then polished. Height  $9\frac{3}{4}$  inches.

present method of fish drying was known early in this period, for a quantity of wooden fish skewers or spreaders of this date have been found. It was during the latter part of the Late period (ca. 1400-1800) that the carving of stone and antler achieved its apogee. Most of these carvings have come from cremation burials dating about 1600-1800. Cremation appears to have been the common but not exclusive method for disposing of the dead from about A.D. 100 until the intervention of missionaries in the early nineteenth century.

AMONG THE PETROGLYPHS found in the area are many which are quite similar in style to the stone and antler carvings. One outstanding rock carving is the representation of Tsagiglalal, "She who watches all who are coming and going." This petroglyph, which consists of a broad face with enormous eyes,

overlooks the Long Narrows from its vantage point above the Indian village of Spearfish in Washington. The natives tell many stories about Tsagiglalal, but most of these appear to be of recent origin. A striking resemblance can be noted between Tsagiglalal and some of the antler carvings.

One of the most common stylistic elements in Columbia Valley art is the depiction of ribs in human and animal figures. An example of this element can be seen in another petroglyph (shown on page 164) which also has mouth and eye elements reminiscent of the "grinning face" motif as exemplified by Tsagiglalal and similar antler sculptures. The figure's ear bangles are similar to those appearing on an incised steatite pipe with a "grinning face" found at Celilo Falls. The presence of the rib motif in Columbia Valley art has been associated by one authority with the widespread "Death Cult." A

carving with ribs was found at Wakemap Mound in a stratum which has been dated by Carbon-14 tests  $1090 \pm 200$  years before the present. Other ribbed sculptures have been found in the mound and at sites which may just antedate the mound.

By dating the occurrence of certain stylistic elements and the various combinations of those elements, we may be able to fix the chronology of many of the petroglyphs with reasonable accuracy. And if we can discover the meaning of the sculptures which resemble the petroglyphs, we may be able to suggest the function of some of the rock carvings.

The Middle period may have begun shortly after the eruption of Mount Mazama in southern Oregon and the onset of the great drought called the "altithermal." These two events, singly or together, may have driven peoples from the northern Great Basin region into the Columbia Valley.

## ART OF THE LOWER COLUMBIA VALLEY

*continued*



Three carved stone implements of the Late period, from Wakemap Mound. Left: a sculptured celt  $12\frac{1}{2}$  inches long (ca. 900-1400). Right: two fine stone mauls with animal heads (ca. 1400).





Steatite carving representing a salmon, with ribs and vertebrae indicated by incision. Length  $3\frac{3}{4}$  inches. This object, dating ca. A.D. 900, was recovered from the bottom of Wakemap Mound a few days before it was inundated by closure of the Dalles Dam.



Tsagiglalal, "she who watches all who come and go." A petroglyph (about 36 inches wide) above the Indian village of Spearfish, Washington. The surface was first coated with a red pigment and then the design was pecked through it into the rock.



Antler sculptures from Wakemap Mound, ca. A.D. 900. Upper left: blanket pin (?). Length  $9\frac{1}{2}$  inches. Detail: the pinhead shows a human head surmounted by a stylized beaver (?). Lower left: headaddress piece in human form. Note the stylized ribs. Length  $5\frac{1}{4}$  inches. Right: pendant in the form of a bird. Length  $2\frac{3}{4}$  inches.





Petroglyph carved on a rock projecting into the Columbia River a few miles upstream from Wakemap Mound and Spearfish. The design embodies most of the stylistic elements used to portray human figures in late times in this area.



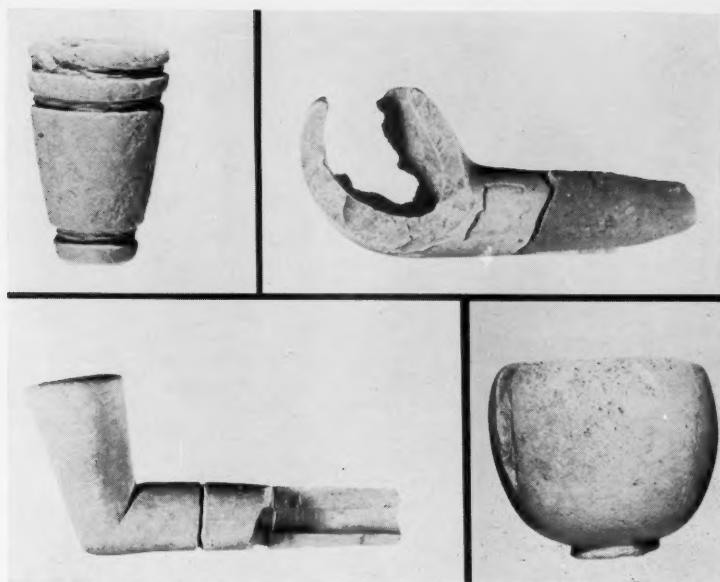
Fragment of steatite pipe from the B. Stewart site, ca. 1600-1800. Length  $1\frac{3}{8}$  inches. The face and ear bangles resemble those on the petroglyph at the left.



Massive zoomorphic stone sculptures from late Middle period, including stylized heads of mountain sheep.

## ART OF THE LOWER COLUMBIA VALLEY

*continued*



Sandstone smoking pipes of various types. These are of the late Middle period.

The altithermal began approximately 6500 years ago and ended about 2500 years ago. We have observed in the Dalles Reservoir an abrupt change in the artifact assemblage which appears to coincide with these dates. The cultural make-up of this period bears a strong resemblance to that of southeastern Oregon, the Great Basin in general, the Basket Maker culture of the Southwest and the Archaic California horizons. Late in this period massive zoomorphic sculptures appear. With them we find a wide variety of thick-walled sandstone pipes—squat “cloud blowers,” elbow and straight-tube pipes. Both the stone carvings and the pipes are illustrated.

The earliest period in the reservoir appears to have had both an Early Lithic and an Early Riverine stage. The Early Lithic stage is at present represented by a single find of a Clovis Fluted point, found on the surface near the Columbia River opposite The Dalles, Oregon. Although other Clovis Fluted

points have recently been reported from the Pacific Northwest, none has been found *in situ*. Thus the question of when the Indian first arrived in the area is still open. The Early Riverine stage, however, is well established. It may have begun more than ten thousand years ago with the establishment of a camp site at the head of the Long Narrows on the Oregon shore. Here thousands of fish vertebrae, bird bones and other faunal remains have been found in association with crudely formed man-made tools. These tools contrast with the well made Clovis point and with the tools of the following period.

This Early Riverine cultural base may have been a more northern cultural tradition and entirely distinct from those in the more southern and Greater Southwestern areas. One archaeologist has suggested that it may be a heretofore unrecognized cultural tradition which had a marginal existence from the Dalles Reservoir northward along the Pacific slope, pos-

sibly as far as the Siberian shore.

The discoveries in the Dalles Reservoir have given us many new ideas about the prehistory of the Pacific Northwest. We realize that there are a number of very difficult problems which need to be solved before we can fully appreciate the significance of the art of this region. It had long been assumed that cremation appeared rather late in the area and that most of the art was confined to the period of contact with the Europeans. There is perhaps some relationship between cremation and the art of this region which may be a consequence of their common origin. Another problem arises from the discovery of the Clovis Fluted point. How long ago did people first arrive in the area and did they stay permanently, or did they move on and new groups take their places? Is the Early Riverine culture a new tradition, or is it an old tradition in a degenerate form? Perhaps another area of the Columbia Valley will hold some of the answers.

# BUTERA—



1. View of the town of Butera showing its hilltop position.

# A SICILIAN TOWN THROUGH THE AGES

By DINU ADAMESTEANU

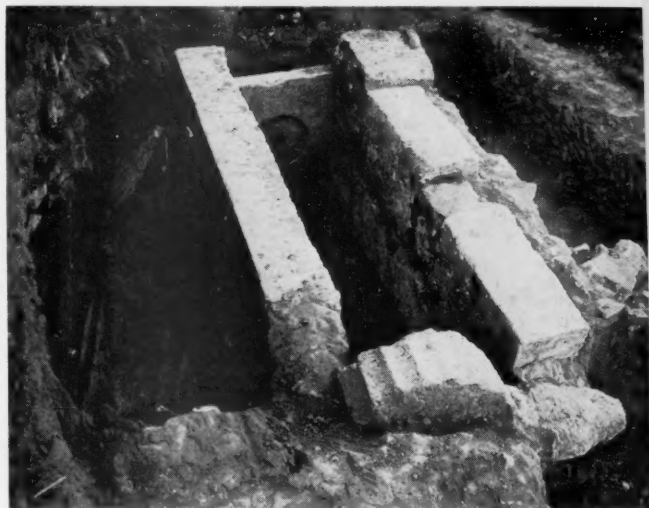
• Recent years have witnessed a remarkable revival of archaeological activity in Sicily, the historic island long known as "the meeting-place of the nations." In this the *Soprintendenza alle Antichità* of the Provinces of Agrigento and Caltanissetta has taken a distinguished part. Especial interest attaches to the investigation of the relations between the indigenous peoples and the colonists arriving from other lands. For this the excavations conducted at Butera have yielded results of the greatest interest. Dr. Adamesteanu presents an account of his investigations in the following pages. (Translation by A. W. Van Buren.)

SOME FIFTEEN MILES NORTH of the famous ancient Greek city of Gela, which lies on the south coast of Sicily, is situated the inland town of Butera, which is probably the site of ancient Maktorion, mentioned by Herodotus (VII.153). As one views Butera from the rampart-walk of the fortifications of Capo Soprano at Gela it seems like a platform set upon a vast terrace. It is clear that a stronghold such as this would discourage any assailant. On every side the cliffs fall away vertically to a depth of more than three hundred feet (Figure 1), and from whatever direction an attack might be launched, it would be futile. It seems obvious that in the eighth and seventh centuries B.C. the native Siculi, when faced by the threat of newcomers on the coasts, would have attempted to consolidate themselves upon the lofty platform of Butera as they had done elsewhere, for example, at Monte Finocchito near Noto, in the southeast part of the island.

The idea of a campaign of research at Butera, precisely because of its position, had come to the master of Sicilian archaeology, Paolo Orsi, over fifty years ago. But when he had concluded his explorations at Butera, his expressed opinion was gloomy for future prospects there—the casual finds which had been brought to his attention were characteristic of about the third century B.C., and there was no evidence of earlier habitation.

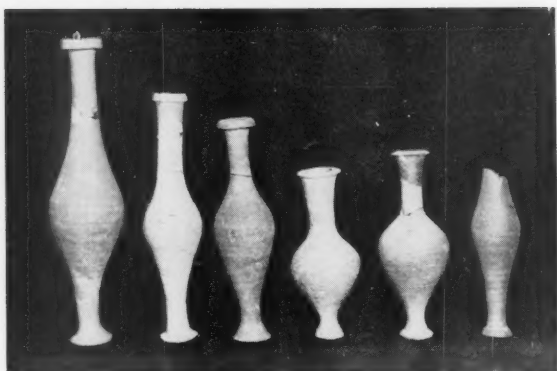
In the first days of July 1951 the *Soprintendenza alle Antichità* for the provinces of Agrigento and Caltanissetta strove to forget this conclusion and made a fresh start at the foot of the small town, with the paltry sum

of 10,000 lire at its disposal. All hope of conducting an excavation on the plateau itself vanished after close search had been made along the narrow streets in an effort to find some space unoccupied by dwellings—every square foot was covered by houses. The only remaining course was to search for the cemetery. And this was easy to find, in the only stretch of ground that was not precipitous—at Piano della Fiera, a strip of land beyond a gully north of the town, sloping southward and bathed in sunshine from dawn to sunset. Here it was that Orsi, in his time, had learned of some burials belonging approximately to the third century B.C. But now we were seeking evidence for the occupation of the stronghold in earlier ages. We therefore determined to keep away from the burial area known to Orsi and to test a place some fifty yards farther toward the southwest. Here, where the gently sloping ground exhibited a series of small knolls, we felt that there might be some tombs. On the



2. A large tomb of the third century B.C., constructed of blocks belonging to the superstructure of an earlier tomb.

## BUTERA *continued*



3. Six spindle-shaped pottery vessels from grave shown in Figure 2.



5. An oddly shaped vase—a covered skyphos, from a tomb of the late fourth century B.C. The fabric can be identified as that manufactured in Gela.



4. One of the earlier tombs, with lower part of superstructure still in place; in foreground are parts of a column which once stood upon a similar base.



surface, however, the potsherds were all Hellenistic.

We had dug to a depth of scarcely eighteen inches when a large tomb came to light. Its walls and its covering were composed of large blocks (Figure 2). A careful study of these showed that all the blocks had been re-used. Some were identical with those that occur in grave monuments recently found (and left in place) outside the Syracuse Gate of Léontini: they were parts of superstructures (*epitymbia*) with colors preserved still fresh on their outer surfaces. One end of this tomb had been fashioned from a plinth with a depression in which a column had been set; the other end incorporated two portions of columns. Although this grave presented the appearance of a monumental tomb, only six spindle-shaped pottery vessels (Figure 3) were found with the body.

During the process of freeing this tomb from the surrounding earth we reached (about one foot farther down) another *epitymbion* (Figure 4). This had the lower part perfectly preserved, but lacked the four blocks of an upper course together with its crowning member, which would have been formed, as usual, by a column set upon a base. South of this funeral monument were lying still other portions of columns. But the elements missing here were exactly the ones that had been found built into the first tomb! From this fact it was possible to reach a conclusion as to chronology: the surface burials—on the evidence of coins of Hiero II (274-216 B.C.) and the spindle-shaped vessels—were datable to the third century B.C., whereas the *epitymbia* belonged to an earlier time; they had been dismantled to provide structural material for the later tombs. The contents of one *epitymbion* (No. XIV) supplied the dating of this type of monument as well—in a covered skyphos (Figure 5) we found a coin, a litra of Timoleon (ca. 345-337 B.C.). This figured vase and other, unpainted, vases found with it are of Geloan fabric. Thus it became clear that the practice of erecting *epitymbia* had reached Butera in the time of

Timoleon. Above these monuments, and to their damage, were constructed the tombs which we had first uncovered, with the re-used blocks. Up to this stage in our investigations nothing came to light which modified Orsi's general conclusion that Butera offered no remains antedating the close of the fourth century B.C.

But during the excavation of one *epitymbion* there came to light in the earth around its foundations various fragments of Archaic pottery bearing a form of decoration which we currently call "Siculan Geometric." In view of the scantiness of our funds, the only course open was to try to penetrate beneath the *epitymbion* in order to ascertain the source of this Archaic ware. We dug a small trench, and at a depth of two feet below the cremation area (*ustrinum*) belonging to the *epitymbion* we came upon a large pithos (storage jar) resting on its side, its mouth closed by a piece of stone. All about the pithos were lying not only many fragments of Siculan Geometric wares, but also the remains of Protocorinthian vases. Inside the pithos were four trefoil oinochoai (pitchers) and a skyphos of Greek make from the neighboring Rhodio-Cretan colony of Gela. Some biconical bronze beads and a long-stemmed iron fibula indicated a date toward the close of the seventh century B.C. This brief campaign of excavation convinced us that we had identified a necropolis with three levels.

IN ACCORDANCE with an agreement between the *Soprintendenza alle Antichità* and a twofold international organization known by the code letters UNRRA-CASAS (United Nations Relief and Rehabilitation Administration and *Comitato Amministrativo Soccorso Ai Senza-tetti*), it became possible, in September 1951, to deepen and extend the excavation at Piano della Fiera. UNRRA-CASAS, in its search for land suitable for the construction of a village to house the all-too-many poor of Butera, had no choice but the area of the Piano della Fiera, the



6. Carved slab which closed entrance to chamber tomb of the late eighth or early seventh century B.C. Dimensions,  $25\frac{1}{2} \times 17\frac{1}{2}$  inches.

location of the cemetery we have described, as all about Butera extends a continuous canyon. UNRRA-CASAS not only obtained for us funds for a large-scale excavation in the zone where its new village was to arise, but also pledged itself to assist us in the investigation and in salvaging all the tombs which might be encountered during the laying of foundations for the dwellings. Now, after four years of close cooperation, we have excavated no less than 515 tombs. As the result of preparing the foundation of a supporting wall for a group of dwellings, we ascertained the existence of still another stratum, the fourth counting downward from the present ground level. This lay at a greater depth than those already known and belonged to an earlier period. Thus we had a necropolis with four levels.

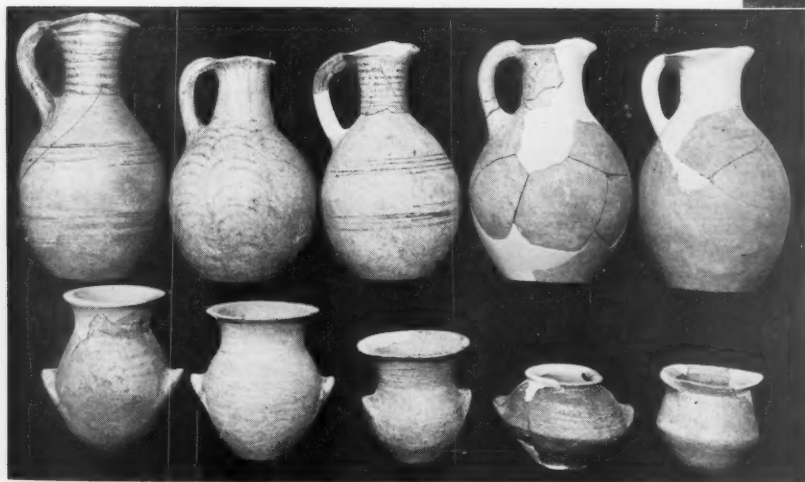
For some time previously, in the course of work conducted by the *Soprintendenza* and UNRRA-CASAS, we had observed still other sherds of trefoil oinochoai among

the masses of earth that had been shifted in antiquity in order to put the pithoi and amphorae (which contained skeletons and ashes accompanied by rich funeral equipment) in place. Characteristic of these pitchers were a tall neck and a slender body decorated by simple parallel lines rendered in dark color upon a whitish slip. There were also many fragments of the "tulip vases" which appear at the end of the second Siculan period and the beginning of the third. To construct a great retaining wall for the new dwellings it was necessary to set its foundation directly upon bedrock. Cutting through the three strata of tombs we already knew, in the autumn of 1953 the workmen reached a depth of four meters (about thirteen feet). Here they came upon the surface of a rock cliff, running east and west, which appeared to have been worked by man. We decided to follow this ridge of friable rock to its base. We dug a trench, and at a depth of sixteen feet below the present surface, near the west end

## BUTERA *continued*

7. *Below:* Oinochoai (wine pitchers) and biconical cups found in the chamber tomb which was closed by the sculptured slab.

8. *Right:* Two-handled goblet with incised decoration, from another chamber tomb of the late eighth or early seventh century B.C.



of the ridge, I observed in the face of the rock a rectangular cutting like a window. This cutting was closed by a stone slab bearing two converging spirals carved in relief (Figure 6). Upon removing the slab, I found myself at the entrance to a chamber tomb. Within the chamber were two skeletons which had been placed along the back wall. They were almost completely covered with rich funeral equipment (Figure 7), including five oinochoai, one of them showing traces of a fan pattern while the others were decorated with plain buff bands. There were also five biconical cups with rudimentary painted handles.

Several yards to the east of the first tomb another chamber tomb was found; the roof had fallen in upon the single skeleton it contained. Here, too, was the same sort of grave offerings—trefoil oinochoai with tall bodies and simple decoration. A difference could be observed in one vessel which had a series of triangles incised on the shoulder. The finest object, however, was a two-handled goblet (Figure 8). The lip of the cup and a band at the base are decorated with a row of incised concentric circles which recall those found at Polizzello and S. Angelo Muxaro (two well known sites in the general area of Agrigento), while in the middle is an incised zigzag pattern, a distant echo of a Protocorinthian motif. There were bronze fibulae as well. From all of the grave equipment (as well as from the absence of Greek vases) it was possible to conclude that this group of tombs antedated the third stratum; that is to say, they belonged to the late eighth and the early seventh centuries B.C. Another chamber tomb yielded a bowl with incised decoration, which is one of the most characteristic types of Protohellenic Sicily (Figure 9).

Thus the outcome of the excavation was the discovery of four successive strata in which the people of Butera

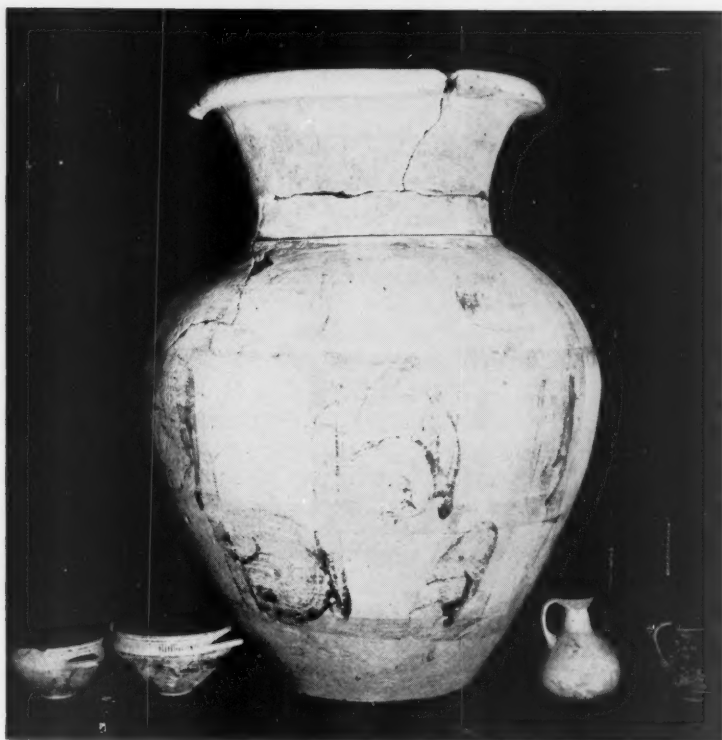
had buried their dead from the eighth century B.C. on down. At last it was possible to include this settlement among the communities with which we know that Gela had to contend in the first attempts to extend its influence towards the interior of the island.

FROM THIS CLOSE COLLABORATION between an Italian administration and an international organization, each with its own aims, we succeeded in determining also the rate at which the Rhodio-Cretan culture of Gela reached this indigenous center, subdued it and then transformed it into a true *polis*. Many instances were revealed of *enchytrismos* (the use of jars for containing the bodies of infants) as early as the time of the burials in the third stratum, and also of cremation, the latter a rite completely unknown to the indigenous people, who consistently practised inhumation. From the convergence of the two rites, however, arose a strange custom: *akephalia*, the



9. Above: Side and bottom views of a bowl with incised decoration, from another chamber tomb of the same early period. Note that the base bears an incised swastika design.

10. Cist grave dating from the mid-seventh century B.C., built in the rear wall of a small edifice measuring about 20 x 12 feet.



11. The large pithos from the cist grave which contained the remains of the deceased. The small vases—one imported, three of local make—were also found inside it.

## BUTERA *continued*



13. A group of other vases found in the cist grave, including the usual types.



12. Two vases from the same tomb. The one above, with a fan pattern, is from Gela; that below was made at Butera.





14. Bronze statuette of a bovine animal, from the sanctuary at Fontana Calda, probably made in Gela.

total cremation of the body while the head was preserved intact. No less important evidence is the presence of the pithoi with fan decoration, typical Geloan products of the seventh century B.C., which reached Butera in quantities, together with Greek vases of Corinthian and Ionic manufacture.

The clearest proof, however, of the speed of penetration of Greek culture came from a tomb which dates from the middle of the seventh century B.C. This tomb, unique in Sicily, is in the form of a large cist (Figure 10). The grave is composed of five huge blocks of stone built into the back wall of a small edifice, a kind of shrine (*sekos*), with an entrance on the south side. Upon opening the tomb we found ourselves facing a heap of vases, large and small, arranged about a great pithos which has a checker-board pattern painted in buff (Figure 11). The abundance of vases—forty-three in all!—includes an assemblage of all the fabrics of the central and eastern Mediterranean. The huge pithos contained the cremated body and the well preserved head of the deceased, as well as an Argive vase, two skyphoi of Geloan fabric and an oinochoe produced at Butera itself (Figure 11). The pithos and another vase decorated with a fan pattern (Figure 12, above) are products of the workshops of Gela. A large amphora with "metope pattern" (Figure 12, below) is certainly of local fabric, while the two Geloan skyphoi just mentioned belong in the Protocorinthian tradition. In a skyphos shown just to the left of another large amphora with geometric decoration (Figure 13) we have the evidence for the date of the tomb: the middle of the seventh century B.C., that is, some forty years after the foundation of the colony of Gela.

From this time on a large proportion of the grave furniture of the necropolis of Piano della Fiera consists of vases brought from Gela or imported from distant lands through Gela's mediation. Bronze objects and scaraboids found in other tombs of the same stratum were likewise brought from a distance; but the pithoi and



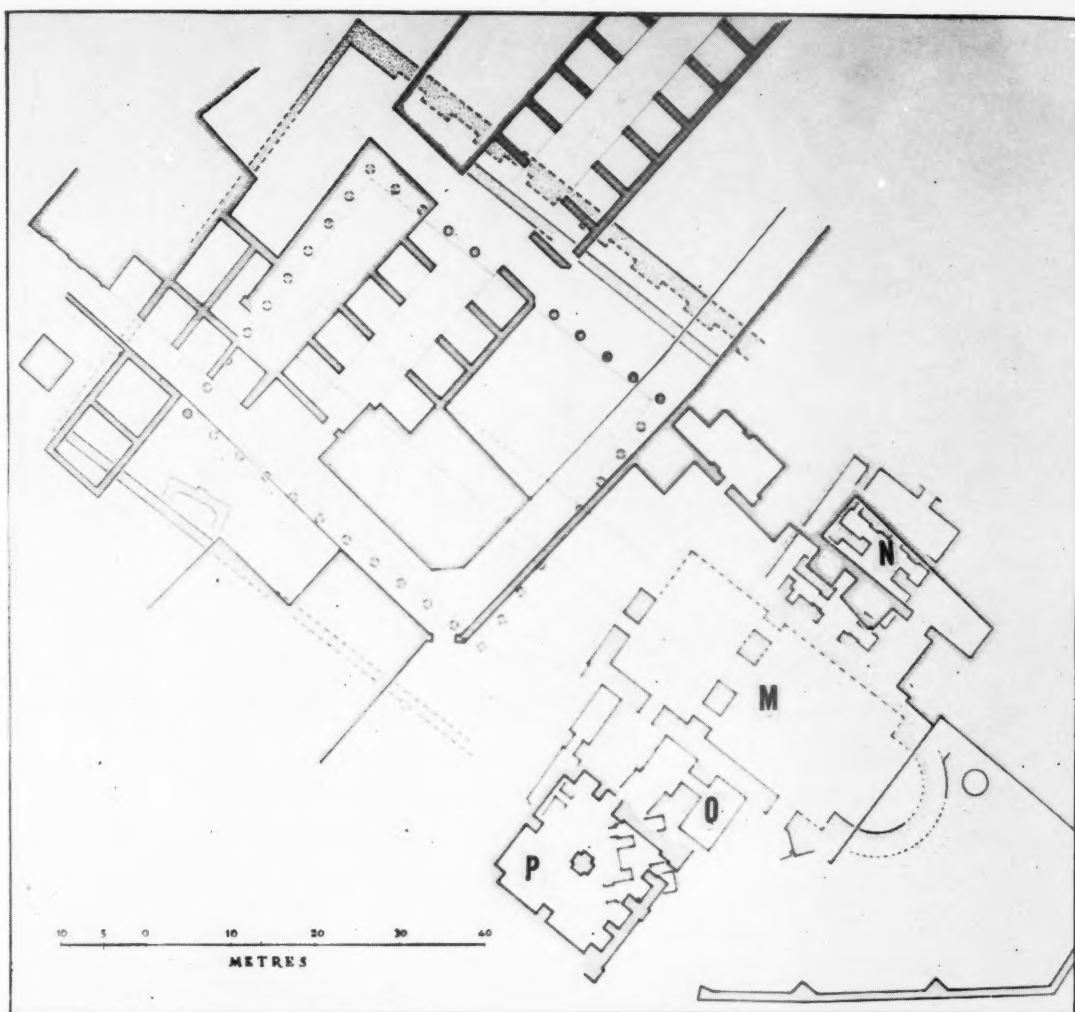
15. Vase with Early Christian dedicatory inscription, incised in Greek letters, from city area of Butera.

skyphoi are products of workshops recently discovered at Gela itself. And furthermore, the large-scale production of the pithoi with fan ornament shows us that the output of a special Geloan ceramic industry was directed toward the market offered by other communities rather than intended for supplying offerings for the cemeteries at the Borgo of Gela itself.

That the community of Butera had as early as the seventh century B.C. entered into close relations with this Greek colony is now a well established fact. It has been demonstrated not only by the rich material unearthed in the Archaic necropolis described above, but also by votive objects discovered in a rural sanctuary at Fontana Calda, on the northern bank of the Comunelli River, at the foot of the stronghold. Beginning with a bronze animal figurine (probably of Geloan origin) datable within the second half of the seventh century B.C. (Figure 14), and coming down to a vase of the late Roman period on which appears the Christian symbol of the fish, this sanctuary has provided complete and abundant documentation of Hellenic life from the Archaic age down to the close of the Hellenistic period, until finally all is merged in the world of Rome and of Christianity. A vase with an Early Christian inscription in Greek incised upon it (Figure 15), from the plateau of Butera itself, serves as a prelude to the Byzantine age—a link, in fact, with the Arab-Norman period, during which Butera was to witness a brief time of great splendor. A glimpse of this splendor may even now be caught in the remains of the massive mediaeval castle which commands a view of Vergil's *Campi Geloj* (*Aeneid* III. 701), the sea and the long chain of hills that finally lose themselves in the shadowy outline of that other Sicilian stronghold, Enna.

Rarely indeed is it granted an archaeologist to gather up within a narrow space and in a short time all the links in a historical chain extending over more than two thousand years. One of those happy moments I have experienced at Butera.

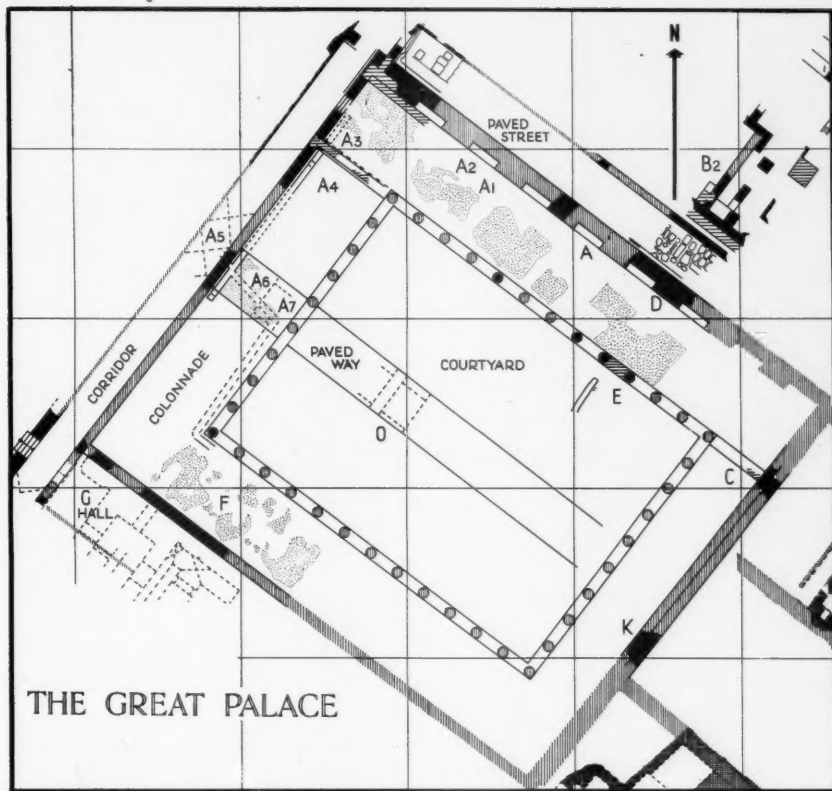




1. Plan of the excavated portion of the Great Palace at Constantinople. At upper left is the peristyle court, at lower right the great apsed building, consisting of an anteroom and a large hall. Stippled areas denote Byzantine structures; hatched areas show later Turkish buildings.

## THE GREAT PALACE OF THE BYZANTINE EMPERORS

By D. TALBOT RICE



2. Plan showing the peristyle court of the palace as it appeared at the close of excavation in 1939. The colonnade surrounding the open area was once entirely paved with magnificent mosaics.

WHEN CONSTANTINE THE GREAT transferred the capital of the civilized world to Constantinople, on the confines of Europe and Asia, in the year 330, an extensive building program was soon set in hand to make what had previously been only a provincial city worthy of its new dignity. Many of the buildings erected there by Constantine were churches, for it was he who first adopted Christianity as the official religion of the state. But there were secular foundations also, and the most important of these was a new imperial palace on the hills overlooking the corner of the Sea of Marmora, near where it meets the Golden Horn. From the days of Constantine onward the palace was repeatedly reconstructed and enlarged until it became a conglomeration of independent structures—council chambers, living rooms, adminis-

trative offices, churches and so on—with gardens and courts in between, covering a hundred acres or more. In the tenth century the Emperor Constantine Porphyrogenitus wrote a description of it, known as *The Book of Ceremonies*, in which its wonders are recounted.

In 1935 the excavation of a small part of this great building complex was begun. One building, a great apsed hall, with a peristyle forecourt floored with a fine mosaic, was cleared and examined during seven campaigns before and after the war (Figure 1).

The nature of the buildings which were unearthed before the war has already been described in the first report. Several separate structures were excavated at least in part. The most important of them was the peristyle court (Figure 2) with a colonnade all around and an open area in the middle. The colon-

• Excavations on behalf of the Walker Trust of St. Andrews began on the site of the Great Palace at Constantinople in 1935. They were carried on for four seasons under the direction of Professor Baxter of St. Andrews University, and were then closed down owing to the outbreak of war. The results of the work up to that time were published and fully illustrated in a preliminary report (*The Great Palace of the Byzantine Emperors* [Oxford University Press, 1947]). In 1952 work was resumed and continued for three seasons under the direction of the author of this article. It has now, for the time being, been brought to a close, since the complex of buildings has now been as fully explored as the presence of streets and later structures on the site will permit, and further excavation would entail a large-scale purchase of ground. Owing to inflated property values, the acquisition of the land alone would be prohibitive, apart from the very great expense of the actual excavation, which in places must go to a depth of some sixty feet before reaching natural soil.

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## PALACE OF THE BYZANTINE EMPERORS *continued*

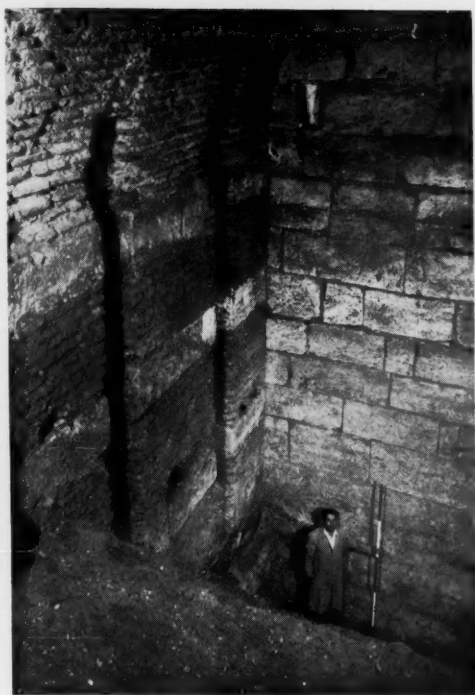
nade was some twelve meters in width, and was paved with a magnificent mosaic floor. Each side was some sixty meters in length. The floor was comparatively well preserved on one side; on another only fragments remained; on a third it had been destroyed but for one small section; excavations before the war had not extended to the fourth, but work in 1954 showed that no mosaics survived there. More will be said below of the floor, both with regard to the sections discovered since the war, still in the main unpublished, and in connection with the place of these mosaics as a whole in the story of Late Roman and Early Christian art. First, however, it is necessary to describe the buildings themselves, more especially those most recently discovered.

On its northwest and northeast sides the great court must have communicated with some of the principal buildings of the Great Palace. We know something of the nature of these from the records, more especially the *Book of Ceremonies* of Constantine Porphyrogenitus, but it is still impossible to say anything as to their exact locations, for they have not been excavated; indeed, the excavation of most of them can probably never be undertaken at all, for they lie buried beneath the foundations of the mosque of Sultan Ahmed and its dependencies. On the southwest side of the court the ground falls away, and there is reason to believe that at this side we are close to the outer extremity of the palace. To the southeast there is an even more rapid fall toward the sea, but here the ground was probably all built over in ancient times; it was evened off in a series of terraces. The uppermost of these terraces, indeed, lay on the opposite side of the peristyle court, closer to the Sultan Ahmed mosque; the second was formed by the peristyle itself and the buildings immediately adjoining it on the southeast. It would appear from the excavations of 1953 and 1954 that the court

actually formed an atrium, or forecourt, to one of these structures, a building which has now been excavated (Figure 1, M).

This building must originally have been of considerable importance. It consisted of two chambers. That nearest the peristyle was about twenty meters in width; beyond it, toward the sea, was a great hall terminating in an apse. The whole was raised up to the level of the peristyle on a series of massive substructures which constituted what was virtually a lower story in the direction of the sea. Adjoining this building on either side were further structures, that to the northeast having the appearance of a church. All were massively built though the nature of the masonry varied and the work was clearly not all of the same date.

The great apsed hall must originally have been extremely imposing. It was built of massive stone blocks (Figure 3) and its walls, at least in the substructures, were some two meters thick. The main apsed hall was separated from the antechamber by a great wall pierced by three arched openings (Figure 4). These had been repaired on several occasions, at least once in stone and two or three times in brick. A series of brick constructions, roofed by vaults and in one instance by a dome, had also been added inside to uphold the floor of the main story. Some of the repairs in brickwork can be clearly seen in Figure 4. The brick vaults were of considerable interest from the structural point of view, for the system of building was one that was never followed in the Roman world, but was familiar in the East. It is the way in which the great arch of Ctesiphon was built. The bricks of the vaults were thus not laid on centering, but back at an angle onto the faces of the course behind. The manner of construction can be clearly distinguished in Figure 5. The import of these discoveries will be discussed in the final report, and it is hoped that it



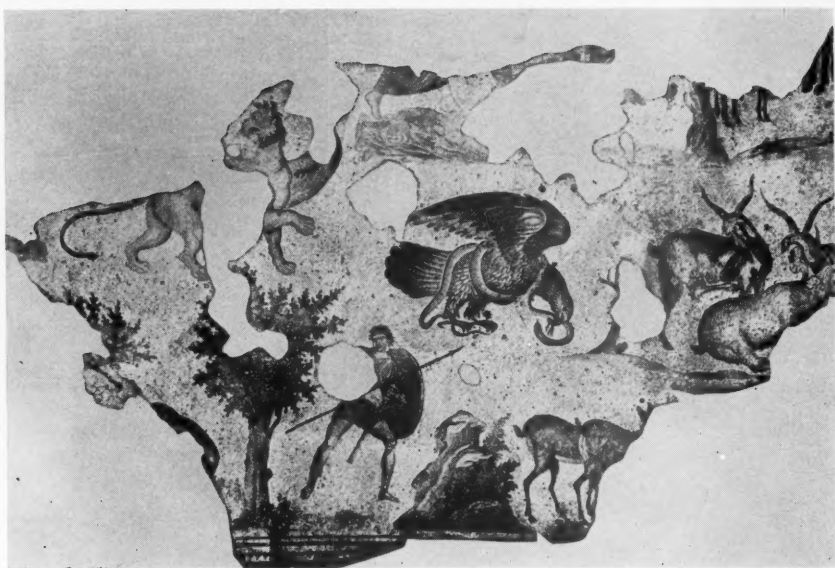
3. Outer wall of the great apsed building. The wall at left, of brick and stone, is from a second building.



4. The great apsed building—transverse wall between main hall and anteroom, showing the southwest opening.



5. Brick vaults supporting the great apsed building.



6. Section of the mosaic floor at A, A 1 (see Figure 2).

## PALACE OF THE BYZANTINE EMPERORS *continued*

will also be possible to work out a reasonably accurate sequence dating for the various periods of repair and reconstruction.

In addition to the main apsed hall, which was aligned exactly with the peristyle court, the structures on either side presented interesting problems of construction. That to the southwest (Figure 1, O) consisted of two parallel vaulted chambers, built in alternating courses of bricks and stone; the way in which they abut onto the outer stone wall of the great apsed hall is shown in Figure 3. In the first report these vaults were identified as the substructures of the Pharos, but subsequent study hardly serves to bear out this suggestion. They are, however, certainly very massive, and the work is of a type to which an early date has been assigned elsewhere. The square building shown beside them on the plan (Figure 1, P) is actually of early Turkish date, and cannot be Byzantine; its identification as the church of St. Elias, as proposed in the first report, therefore cannot stand. The building on the opposite side of the great apsed hall (Figure 1, N) which was identified in the first report as the church of St. Demetrius, would, on the other hand, definitely appear to be a church, but its exact identity can hardly be regarded as certain.

THE GENERAL DIMENSIONS and character of the mosaic

pavement of the colonnades were firmly established before the war. In brief, it consisted of a main area with large-scale designs in parallel registers, enclosed by inner and outer borders, each about one meter wide. The whole pavement was more than ten meters in breadth, and each side was some sixty meters long. The astonishingly rich variety of the motifs of the decoration is illustrated by Figure 6, which shows a small section of the floor. The excellence of the technique, the brilliance of the coloring, where cubes of glass are used alongside those of marble, and the over-all richness of the work are quite outstanding. In these respects the floor is unequalled by any others known from late Classical or early Byzantine art. Nor does any other pavement that is known show so rich a repertory of subjects. The sections unearthed before the war already comprised an astonishingly rich repertory: figures of almost classical elegance, poetic idylls of country life, hunting scenes, animal combats, fantastic monsters, sometimes savoring of the Orient—all appear together with curious inconsequence.

Discoveries since the war have added considerably to this repertory (Figure 7). In one place an area of pavement some eight meters long was unearthed. The motifs comprise, in the register adjoining the inner border, a hunter on foot, a camel with two boys on it being led by a man (Figure 8) and an elaborate



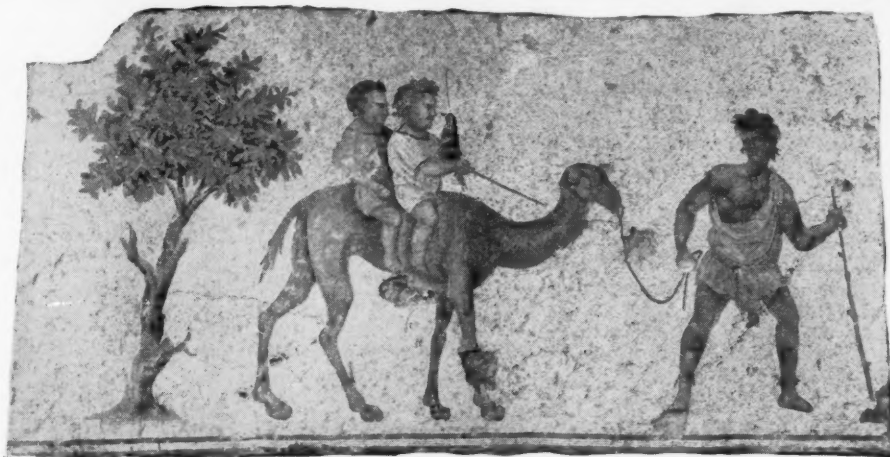
building with two arches in it through which two rivers gush out. In the second register there is a fountain, a tall tree, a mounted hunter pursuing two deer, and a bear devouring a small animal, probably a lamb. In the third register are two peasants hoeing, a tree, and a rider being kicked off his mule (Figure 9). The latter composition is especially interesting, for it is shown most vividly and great attention has been given to the rendering of the mule's mulish character; it has a particularly nasty look in its eye.

This section of the floor was under a street, the Torun Sokak, and most of the compositions have had to be lifted. They have been installed in the arcades of a Turkish building which occupied a portion of the site, and fragments from other sections of the floor which could not be preserved *in situ* have also been reconstituted in the same place. Practically the whole of one side of the court, however, where the mosaics were especially well preserved, has been left in place and roofed over. It can now be visited as an independent section of the Museum of Antiquities.

In addition to the scenes indicated above, an interesting section of the inner border was also unearthed during the 1953 season. The border consists of great acanthus scrolls which enclose various motifs such as birds, animals and, more often, fruits and flowers. At important places, however, it would seem that human heads were included, to form nuclei from which the scrolls took their beginnings. Several heads representing the bearded face of Oceanus had been discovered before the war. Such heads are not unusual and parallels can be cited on other floors as well as



7. Uncovering mosaics below Torun Street, during post-war excavations. At the bottom are the figures shown below.



8. Mosaic representing two boys riding a camel led by a man.



9. Mosaic showing a rider being kicked off his mule. The animal is also ridding itself of bundles of faggots.

## PALACE OF THE BYZANTINE EMPERORS *continued*

in sculpture. In 1953, however, a head of a very different type was unearthed (Figure 10). Though the hair blends with the scroll and though the colors are conventional, the mustache for example being blue, the effect is that of a portrait from life. The head is extremely forceful and expressive, and it is tempting to suggest that it represents a Goth or barbarian.

In the first report a date around 420 was suggested for the mosaics, on the evidence both of stylistic features such as costumes and hair-dressing and also of such archaeological data as were available. Subsequently this date has been questioned by other scholars, some suggesting a fourth or even a third century date on the basis of the very Classical character of the figures, and others assigning the floor to the end of the fifth or even the early sixth century, on the grounds of similarities to work at Antioch and elsewhere which can be dated to around 500. The animals and the figures of hunters on the Constantinople floor seem to support this date, for they are closely paralleled in the mosaics of the House of the Hunt from Antioch, now at the Worcester (Massachusetts) Museum, dated to about 500, as well as in a floor from Apamea (now at Brussels) which is dated by an inscription to 539. But on the other hand many of the animals at Constantinople are also similar to those on a floor recently discovered at Piazza Armerina in Sicily. The date of the Piazza Armerina mosaics has, unfortunately, also been disputed, dates around 300 and

around 400 both having been suggested; the latter is considered the more likely. Stylistic features as a whole seem to support a date in the fifth century for the Constantinople floor, and it is probable that the similarities it bears both to later and to earlier works are to be attributed to the fact that sketches or copy-books of some sort were used by designers of mosaics throughout the whole late Roman world. Only in this way can the close parallels between floors in Constantinople and Sicily, Syria or even far distant Africa, be explained. The whole problem will, however, be fully examined in the final publication of the excavations, which should be ready in the near future.



10. Mosaic with elaborate floral design and a huge male head of unusual type, perhaps the portrait of a barbarian chief.



The largest house in the village of Pan Po, during excavation. Observe the thick outer walls.

## OUR NEOLITHIC ANCESTORS

*By Hsia Nai*

BY KEEPING in close contact with the constantly increasing number of industrial construction sites China's archaeological organizations have succeeded in bringing to light new and important finds. Among the most exciting is the discovery of a complete Neolithic village at Pan Po, east of Sian in Shensi province, during the building of some factories there. Pan Po is one of two or three hundred Neolithic sites located since 1949. The largest and best preserved of those excavated, it gives the fullest picture so far available of the life of Neolithic man in China.

Preliminary investigations by local archaeologists in October 1953 revealed that the settlement belonged to the Yangshao painted-pottery culture (named after the place in Honan Province where it was first discovered). In 1954-55 work was continued by a team sent by the Institute of Archaeology of the Academia Sinica, assisted by museum personnel and university students. Much excavation still remains to be done, but the additions made to our knowledge of the Yangshao culture are already

impressive. Previously discovered sites of the Yangshao culture are located in Honan and Kansu. This is the first one found in Shensi, which lies between these two provinces. It thus helps to establish the relationship between previous finds.

For the first time we can see how the Yangshao people built their houses. The discovery of remains of millet in a covered pot proves that they cultivated that grain, which is still the staple in the area. We had examples of their pottery before; now we can examine the kilns in which it was made. The pottery itself, we now know, bore designs depicting human faces and fish, as well as the geometric patterns previously familiar. We have also acquired more information on burial customs.

It appears that the people of that time lived a settled

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• The author is Deputy Director of the Institute of Archaeology of the Chinese Academy of Sciences in Peking. He has participated in excavations in England, Egypt and Palestine. The article is adapted from one which appeared in the periodical, *China Reconstructs*.



Some of the forty or more burial jars which contained the remains of small children.

## OUR NEOLITHIC ANCESTORS

*continued*

communal life. Besides farming, their main occupation, they engaged in hunting, fishing and the gathering of wild food. Their chief working tools were stone objects made by the polishing or flaking technique. Pottery was used for cooking and storage. Skills and arts were at a fairly high level. One large rectangular house was apparently the communal house of the clan. Tombs and kilns, as well as dwellings, were arranged in a definite way. From such evidence we infer that the Yangshao people of the Shensi-Kansu area engaged in collective labor and had a fairly well developed social life.

The village at Pan Po, covering an area of about two and a half acres, is located on the right bank of the Chan River. Abundant water and fertile yellow loess earth gave the settlers good conditions for agriculture. They did not have to shift from place to place because of the exhaustion of the soil by primitive methods of cultivation. Hence the cultural deposits, in some places accumulated to a depth of three meters, give evidence of long-continued occupation. The best preserved section of the village consists of four distinct layers of houses and other structures of the Yangshao culture.

The circular shape of the huts at the lower levels suggests that these people copied temporary shelters or tents used earlier. The huts are small, about five meters in

diameter, with walls of wattle-and-daub. In one hut that is rather well preserved the roof had fallen in. Its remains, consisting of a wooden beam and a layer of burnt clay with reed impressions, were found on the floor. Around it the clay walls, 5 to 10 cm. thick, were still standing to an average height of 22 cm. (in one place 38 cm.). Post-holes show the position of wooden upright supports. The floor and the inner surface of the walls are finished with a thin coat of plaster. In the center of the house is a pear-shaped oven, on either side of which are six post-holes arranged in pairs. The door is at the south. The covered entrance (70 cm. wide) is separated from the main room by partition walls.

Side by side with the circular huts are rectangular or square houses with rounded corners. They too have entrances, or porches, open on the south, and have plaster-finished floors and walls. Measuring four to five meters on each side, they are usually half subterranean, sunk about a meter below ground level. Stairways, one of them with four steps, descend from the porches to the houses. The main rooms contained the debris of ovens and pots. Near the middle of each main room a big post-hole shows that there was once a single supporting pillar.

Sometimes several houses were superimposed, owing to the renewal of the structures. The clay walls of some





A circular hut, showing post-holes and remains of an oven in the center, and entrance at top.

had been baked by fire. One had twelve upright pillars (15 to 22 cm. in diameter) arranged in three rows of four, which served as supports for the roof and a framework for wooden planking. This house has five superimposed floor layers, apparently baked by fire, and is divided into two rooms by a partition wall running east and west.

The largest building is rectangular and measures 12.5 meters from north to south. The east-west measurements are hard to gauge since the western part has disappeared. By assuming that the pillars were at the center of the room, we concluded that the room may have been twenty meters long. The clay wall is one meter thick. Part of the floor of this house was destroyed when a tomb was dug through it in the T'ang dynasty. It was in a small pit under the original ground level that the excavators found a covered pot of grain which the Hopei Agricultural Institute identified as millet. Near every house there are storage pits, usually in the shape of a rounded depression larger at the top than at the base. These are about a meter in diameter and the same in depth.

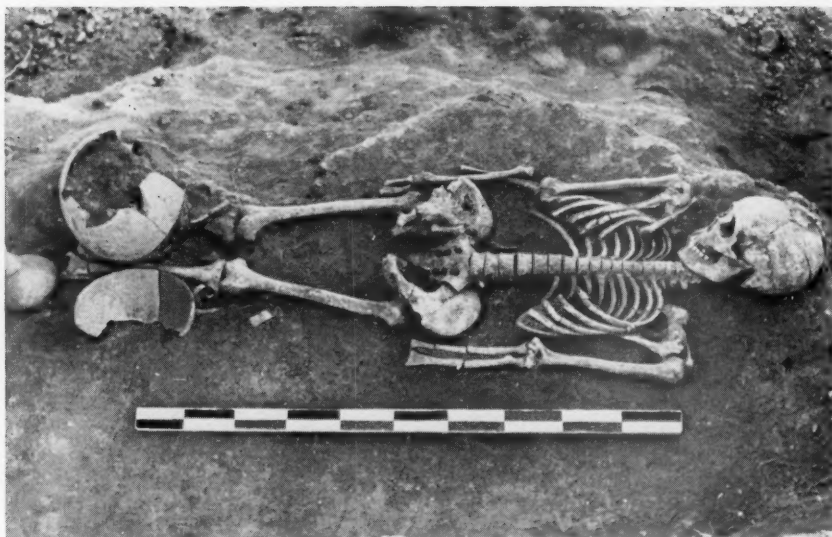
Among the houses were found over forty burial jars containing the remains of small children. Most of the jars are flat-bottomed, large-mouthed pots of coarse ware, in most cases purposely perforated with a small hole at

the bottom. A small basin or bowl of fine red pottery is the usual cover. Some of these jars are grouped in small cemeteries.

In a separate cemetery for adults, to the north and northeast of the settlement, 130 tombs have already been cleared. The rectangular tomb pits, some two meters deep, were arranged in rows. Typically, a pit contains a single body in extended position (in contrast to the contracted or flexed burials found among the Yangshao people of Kansu). Five or six pieces of pottery were generally placed near the legs or feet of the dead. Normally they include coarse jars, fine bowls and small-mouthed bottles with pointed bottoms. Painted vases with high necks and fine pots with finger-nail impressions have occasionally been found. In one tomb the waist of the corpse was encircled by a string of sixty-three bone disc-beads. An ear pendant of green stone lay near the left ear.

The painted pottery of the Yangshao people has long been celebrated. Six kilns were found in the eastern part of the village. The upper parts of the kilns, including the baking chambers and chimneys, had been largely destroyed. Nevertheless it was possible to see that the kilns were of two types, each with a different kind of firing chamber.





Skeleton of an adult, with vases grouped at the feet, including one intact vessel.

## OUR NEOLITHIC ANCESTORS

*continued*



Pottery kiln with long, almost horizontal tunnel for firing chamber.

In an example of the first type the firing chamber is a pocket-shaped pit (1.30 m. high, 1.90 m. in diameter at the bottom) with an aperture on the south side which served for feeding fuel and withdrawing ashes. Part of the perforated floor of the kiln survives (the perforations are 15 cm. in diameter and 30 cm. in depth). The heat from the firing chamber came directly into the kiln. The greenish tinge of the furnace wall and its extreme hardness showed the high temperatures used in firing.

Most of the kilns so far excavated are of the second type. Here the firing chamber is a cylindrical tunnel, placed almost horizontally. In a typical example the distance between the aperture of the furnace and the base of the kiln proper is over two meters. The heat passed through the tunnel, then upward into the kiln through ducts. The kiln floor is 85 cm. in diameter and is perforated by ten small rectangular openings around the edge. Several unbaked pots of coarse ware were found in one such kiln.

Both coarse and fine pottery was manufactured in the village. All the vessels are hand-made. Some retain clear traces of the ring-building method, but not one shows wheel marks. The potters built up vases of various forms out of well levigated clay, then fired them evenly until



Painted bowl and vase with narrow neck and base. Both of these vessels were found at the site of Pan Po.

they became orange or brick-red. Elaborate designs in black paint were afterward applied to the burnished surface. On a few pieces a white slip was applied before painting to reduce the porosity.

The favorite types of painted pottery were flat-bottomed vases with wide mouths, long-necked bottles, basins with overhanging rims, and round-bottomed bowls. Most of the designs are geometric—zigzags, concentric circles, triangles, and trellis or net patterns. But a few are zoomorphic, including fish forms and human faces, and these are of special interest. The human face, though conventionalized, is quite lifelike, with eyes, nose and mouth indicated. Fork-shaped and pointed decorations on the head seem to represent ornaments. Also common are small-mouthed vases with pointed bottoms, made of plain red ware and usually decorated with thread-impressions. Other decorative designs were employed for such ware: impressed triangular or circular dots (made in the soft clay with a pointed implement), finger-nail impressions and cord impressions. Sometimes the pots are gray or blackish in color, owing to controlled firing.

The coarse ware, red or gray, was tempered with sand. The cooking and large storage vessels made of this ware

are commonly decorated with applied strips of clay in relief. Cord impressions are also frequent. The coarse jars and vases usually had red bowls of fine ware as lids. In some cases the lid was a potsherd purposely chipped into disc shape.

The Yangshao ceramics show similarities with those of the somewhat later Tripolye culture in the Ukraine (ca. 1900-1400 B.C.), and the earlier painted pottery of Iraq and Iran. It is not derivative, however, having its own original style.

Other ceramic objects include spindle whorls, balls, knives or millet cutters, and hairpins. Pottery rings were found in great profusion, as were "rubbing-pieces." The latter, of fine red ware, are generally rhomboid in shape and rectangular or square in cross-section. They are very hard and their flat surfaces are full of small pits. Such objects could have been used for rubbing or scouring and, judging from the frequency with which they occur, were employed in daily life, but just how is not clear. The small pottery balls were probably used as sling-bullets for hunting.

Over nine hundred bone artifacts were also found. These include needles, borers, chisels, spatulas, spoons, hoe blades, arrowheads, harpoon heads and fish-hooks.



Pottery basin with unusual painted designs—a fish and a human head decorated with fish motifs and other ornaments.



Bone tools—needles, awls, fish-hook and arrowheads.

## OUR NEOLITHIC ANCESTORS

*continued*

Some of the needles are perfectly preserved, with the small eye finely made. Borers and awls, also numerous, were made from fragments of the long bones of animals, with the pointed end highly polished by use. Most are round in cross-section, but some are triangular or flat. The arrowheads are of various shapes, some conical, some flat and triangular, some prismatic in cross-section. The spatulas were probably used to shape and polish pottery vessels before firing. The fish-hooks are extremely well made. The large bone hoe blades were probably used in agriculture.

Of the six hundred stone tools recovered, the majority are broken or incomplete. Most of them seem to have been made by the polishing method, only a few by flaking. Among them are axes, adzes, chisels, hammers, disc-shaped mace heads, knives or millet cutters, hairpins, small balls and millstones.

The commonest type of stone axe is oval in section, in contrast to the square-sectioned axes found on Yangshao sites in Honan. The adzes are all small, and were probably used for woodwork. Quartz arrowheads were made by chipping, those of red stone by polishing. Both types are usually broad, thin and short. The highly polished stone balls, like those of pottery, were used in slings.

From our excavations we have learned that agriculture flourished at this early period. The millet cutters, hoe

blades, storage pots and grain pits all show this. These early ancestors of the Chinese people also raised domestic animals. Bones of swine, dogs and sheep were found around the village. The people hunted; they fished with hook and line, and also with harpoons. They wove cloth, as is shown by the spindle whorls and by the impressions of loosely woven linen on the coarse pots. But they did not yet know the use of metal.

The results of this excavation may also help us to as-

sign a proper date to the Yangshao culture. Hitherto it was supposed to have flourished around the second half of the third millennium B.C. But that was only a guess. Now we hope to establish an absolute chronology by applying the Carbon-14 test to charcoal from the village.

Work at Pan Po village will continue. Two thirds of the site still remain to be uncovered. When this is done, we shall learn still more about the Yangshao, one of the chief Neolithic cultures of China.

## GLASS *from the ancient world*



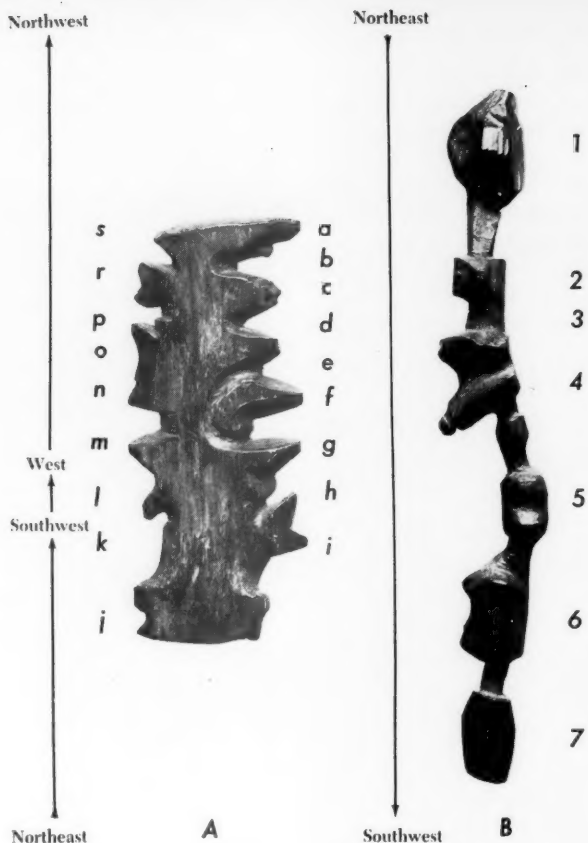
THREE BASIC METHODS by which glass vessels were made in ancient times are illustrated here. The earliest, at left, is an Egyptian vase of the Eighteenth Dynasty (ca. 1546-1350 B.C.) made on a sand core. At lower left is a multi-colored bowl composed of small units fused together in a mold. It was manufactured around the beginning of the Christian era. With the invention of glass-blowing in the first century B.C. the tedious methods previously in use were gradually supplanted. Patterned mold-blown flasks like the one below could easily be made and glass vessels became accessible to everyone. These and more than four hundred other objects from the Ray Winfield Smith Collection are illustrated in the catalogue, *Glass From the Ancient World*, published by the Corning Museum of Glass. The collection will be shown at the Smithsonian Institution, Washington, D. C. from December 23rd to January 15th.



# ESKIMO MAPS FROM GREENLAND

By CAPTAIN CARL V. SØLVER

1. Eskimo chart carved in wood about 1883, showing part of southeast coast of Greenland, north of Angmagssalik. A represents the mainland, B the line of islands just off the coast. Letters and numbers are points of reference corresponding to those on map in Figure 2. Courtesy National Museum, Copenhagen.



IN THE ETHNOGRAPHIC DEPARTMENT of the National Museum of Copenhagen are some odd wood carvings, so insignificant in appearance that one is apt to pass by without noticing them. But these objects are really of great interest, as they are in fact representations of the coastal area in the vicinity of Angmagssalik in southeast Greenland, made by Eskimo who had had no contact with Europeans. The carvings were collected by Captain Gustav Holm, who wintered in Angmagssalik in 1884-85. He was the first European to travel along this whole coast.

• Captain Sølver's article originally appeared in the Danish periodical *Vikingen*, in November 1954. Mr. Christian Kampen of Copenhagen brought the article to our attention, suggesting that it would make an interesting addition to the account of ancient map-making in our Autumn 1955 issue ("By Their Maps You Shall Know Them," by William H. Stahl). Mr. Kampen also furnished a translation and obtained the original illustrations for us. Although it is not our custom to reprint articles which have appeared in other journals, we have decided to present a somewhat condensed version of Captain Sølver's account of Eskimo map-making, believing that it will be of considerable interest to our readers.

The origin and use of these unusual carved wooden maps or charts are described in Captain Holm's report of his voyage.

The chart shown in Figure 1 was sold to Captain Holm by an Eskimo from Umivik who had learned that the captain wanted information about the coastal stretches north of Angmagssalik. This chart covers the region of Sermiligak and Kangerdlugsuaitsiak. The Eskimo, to quote Captain Holm, "had carved the chart himself and declared that it was not unusual to make such charts when one wanted to tell others about regions they did not know. He explained all the details of the chart, showing me, for instance, how the place was marked where one could carry a kayak overland between the heads of two fiords along the edge of the glacier when sea-ice blocked the passage around the foreland" (see Figure 2).

Later on in his report Gustav Holm continues: "Nothing could surprise or please them (the East Greenland Eskimo) more than to be told about Denmark, where there were no mountains and ice was seldom seen, or about Akilinek (Iceland), with its hot springs and active





## ESKIMO MAPS *continued*

4. A wooden chart from Angmagssalik, carved in low relief. This type of map clearly shows European influence. Courtesy National Museum, Copenhagen.



natural way is to represent it by carving. . . . It would demand a more advanced civilization to draw a coastal stretch. . . . It would be something quite new to the Eskimo, which he would not invent by himself. . . . It is extremely doubtful, however, that a European would ever attempt to project a coast by carving in wood. It

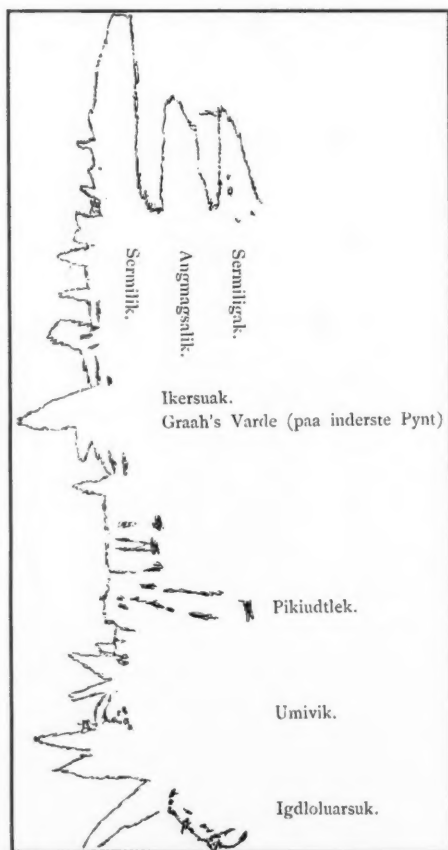
therefore seems likely and believable that the Eskimo themselves have invented the wood-chart."

The wooden charts are also discussed by William Thalbitzer in "The Ammassalik Eskimo," Part I (*Meddelelser om Grønland* 39 [1914] 665ff.). Professor Thalbitzer notes, "Besides this kind of map the Ammassalikers have often in later times carved maps as bas-reliefs on wooden boards." . . . (Figure 4.) "Drawings of maps on paper have also frequently been made by the Ammassalikers. In these the Eskimo display an accuracy, which has been put to the proof by many of the earlier and more recent travellers in the arctic countries."

The assumption that the Eskimo invented the wooden chart has been disputed by certain authorities such as Hansen-Blangsted, who in 1886 (*Société de Géographie: Compte rendu* No. 5, page 162) declared that these charts had been carved by European navigators who were stranded on the coast and were absorbed into Eskimo tribes. He cites some expeditions during the eighteenth and nineteenth centuries which disappeared without a trace. It does not seem very likely, however, that these simple and peculiar carvings are due to European influence. A European would probably have carved the contours of the coast and the islands on a flat piece of wood, just as the Eskimo did after having seen the charts made by Gustav Holm. The Eskimo have sharp eyes for details of landscape and ocean, accurate memory of places seen long before, and a thorough knowledge of plants and animals. Moreover, they observe precisely the positions of sun and moon and changes in the weather.

The people of Angmagssalik were able to assure Gustav Holm of a fact unknown to him, that Greenland was an island, since a native by the name of Ujartek ("Land-trotter") had sailed completely around it.

To disprove the theory that the Eskimo were the originators of the wood-chart it would be necessary to make a much more detailed study than has hitherto been undertaken. If there was any European influence at all, it might have been that of the Norsemen who lived in Greenland in mediaeval times and had contact with the Eskimo.



3. Map of a stretch of East Greenland coast, from Tingmiarniut to Sermeligak, drawn by Angmagainak, a native of the region.



Red-figured Attic amphora—the most complete figured piece found in the well. A man, perhaps Zeus, extends his hand in urgent gesture to a young woman who runs away. Height 60 cm.

## POTTERY FROM PERICLEAN ATHENS

BY CEDRIC G. BOULTER

IT IS A PARADOX familiar to archaeologists that pottery is at once both fragile and indestructible. A cup or a plate or a pitcher is easily broken, and once broken is usually not worth repairing, but its fragments are immune from corrosion and decay, and may remain unchanged for centuries. Considering the great antiquity of the craft and the variety of needs it has served, it is not surprising that at every excavation of an ancient site the yield of broken pottery is always abundant, sometimes so much as to embarrass the excavator. He may not have time to prepare adequate records, or may lack skilled technicians to reassemble the fragments or facilities for proper storage. This is particularly likely to be the case if the site is at all remote, one where it is possible to spend perhaps only a month or two each year. At a site with a permanent research center these problems are less pressing but do not cease to exist. Such a center has been maintained in connection with the excavations of the Athenian Agora. Here the problems are magnified by the scale of the project, and a necessary part of the undertaking has been the devising of a system of records that can keep pace with the volume of the finds and also make the data readily accessible.

The procedure employed at the Agora to meet these

needs has already been described in "Pot's Progress" (ARCHAEOLOGY 1 [1948] 13-20) apropos of a black-figured wine jar which originally formed part of the tableware of an Athenian family at about the middle of the sixth century B.C. For hundreds of years it lay in fragments at the bottom of a well along with other broken pottery, until it was brought to light in 1947 and the fragments restored in the Agora workshops. In the article mentioned this wine jar was used to illustrate the workings of the system of records, and also to draw attention to the amount of valuable material recovered from the fillings of wells.

The present account will elaborate on the same theme, with particular reference to one well that was remarkable both for the quantity and the diversity of its contents. Only a few days in 1951 were required for its excavation, and it represented only a small part of the area supervised by one excavator, but the pottery from this well alone filled eighty of the five-gallon tins which are used as containers. To do justice to this material was to require

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## POTTERY FROM PERICLEAN ATHENS *continued*

### KITCHEN POTS OF VARIOUS SHAPES



*Color plates courtesy Charles Phelps Taft Memorial Fund, University of Cincinnati.*



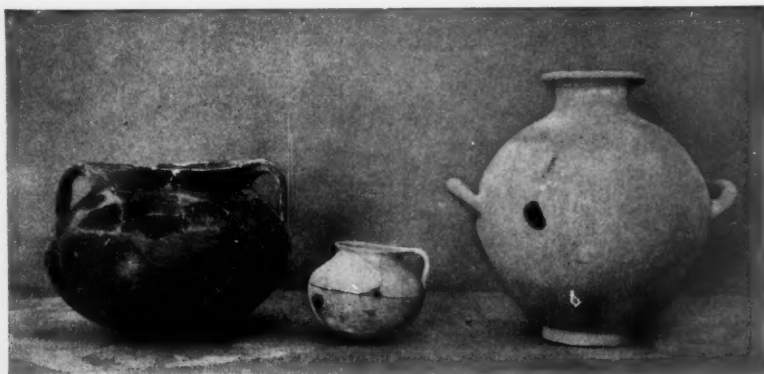
several months' work on the part of menders and specialists, with frequent assistance from photographer and draftsman.

The well shaft was originally dug about 450 B.C. at a spot near the northeast corner of the Agora square, but after a few years its sides caved in at the bottom and it was given up as useless except as a receptacle for trash. What survives today from ancient rubbish is largely broken pottery, since organic matter disintegrates rapidly in the soil of Greece. Accordingly, about 440 B.C. the abandoned shaft was filled with rubbish, which then lay undisturbed until 1951.

After excavation the initial step is washing the sherds as they are brought up from the well. In accordance with the usual procedure the sherds were kept in separate containers corresponding to the depth at which they were

found. This care, however, proved to be needless, for joins were immediately noted between some fragments from the top of the well and others from the bottom, and it soon became clear that the whole collection had been thrown in at one time.

If the accumulation had taken place gradually, over a period of fifty or sixty years, the contents would have been examined a few containers at a time, with an eye to the stratification. But in this instance the whole collection had to be spread out in order to allow the vase-mender full range in his search for joins. Even the capacious workrooms at the Agora were taxed, and it became necessary to overflow into the courtyards. If the reader will imagine a collection of jigsaw puzzles the pieces of which have been jumbled together and which, even though many pieces are missing, still needs about six hundred







Fragment of a red-figure amphora. The warrior holds a shallow bowl for pouring a libation as he leaves for the war.

## POTTERY FROM PERICLEAN ATHENS *continued*

square feet of table space to permit the most cursory examination, it will be possible for him to judge the difficulty of the mender's task. But gradually results became apparent, and here and there pots began taking shape, in the reverse process of the accidents that had destroyed them—the awkwardness of some servant in an Athenian kitchen or the careless gesture of a guest at the *symposium*. Day by day familiar shapes were recreated, and daily also strange shapes and fabrics were noted.

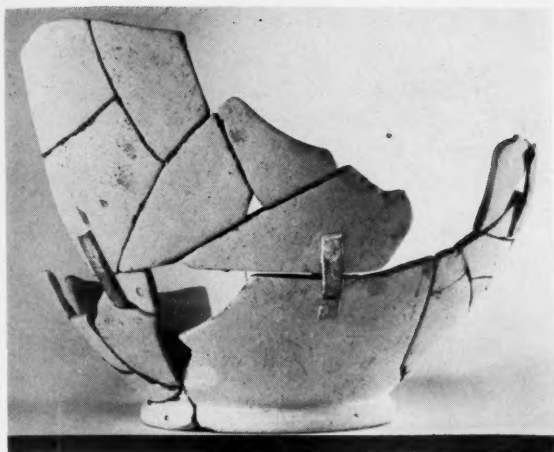
TO THOSE WHOSE NOTION of Attic vases is based on museum collections the pottery from the well doubtless will seem curious. In museums Attic pottery of the fifth century B.C. is represented by masterpieces of design and draftsmanship that go by the general name of "red-figure." But this costly fabric is not usually found in abundance among the debris from a well, and in fact the red-figure fragments were the scarcest of all the fabrics in the deposit. It was from these few pieces, however,—from perhaps two dozen vases—that the date of the whole deposit was determined, for in the known development of the red-figure style they fitted within twenty

years, 460-440 B.C. It was therefore reasonable to assume that the other less well known wares could also be dated within these twenty years.

Next after the red-figure pieces, in diminishing order of costliness but in increasing quantity, came wine cups in plain black glaze (the same fabric as red-figure but lacking its decoration), semi-glazed jugs and mixing bowls from the kitchen, soup kettles, cooking pots and braziers, wash basins and bathtubs, and, most of all, sturdy storage jars for wine or oil. There were of course many other objects—lamps, loom-weights, water pipes, roof tiles. Almost nothing in the repertory of the Athenian potter seemed to be missing. Whence did it all come? Obviously this debris could not have come from a single private house, unless we imagine a very large and very careless family, for there were fragments of about one hundred and fifty cups. Some of these had their owners' names inscribed on the bottom, which suggests breakage from a tavern. But this would scarcely be consistent with the remains of half a dozen different sets of loom-weights. Possibly the well, first as a water-supply and later as a dump, served both the public buildings at



Fragment of a drinking cup, or kantharos. A satyr is shown running to the right, a thyrsos in his hand.



Part of a large amphora broken in antiquity and mended with lead clamps. This method of mending pottery was common, even for expensive figured vases.

this corner of the square and the private houses which adjoined it.

It is less easy to account for the fact that in some cases almost all the fragments of some vases were found in the deposit, while the remains of others were too scanty to allow even partial restoration. We know one possible explanation for the dispersion of some of the fragments: in the fifth century B.C. potsherds were regularly used as ballots in the periodic elections held for the purpose of ostracizing. Indeed there was an *ostrakon* in this well bearing the name of Pericles, perhaps cast against him in 443 B.C. It was cast in vain, for at that time not Pericles but his foremost rival was banished from Athens.

Vases that proved to be substantially complete were filled out in plaster, and these went to enlarge the collection on display in the Agora's vase room. Many fragments, too, were interesting enough to require space on the museum shelves and a place in the published account. The other pieces went into storage, ready to be summoned forth if there should be need to re-examine or to check the results of initial study.

With the mender's task done and the chronological limits of the deposit approximately set, the specialists could begin relating this new body of material to that already known. In antiquity the pottery of each period differs from that of every other in shape or decoration or fabric, or all three. Changes in shape and decoration do not take place haphazardly but rather in specific directions. To arrange the pottery in its proper ceramic sequence is a primary objective of the archaeologist.

Sometimes the rate of change is so rapid that vessels of a particular shape in one decade may be easily distin-



Drinking cup, or skyphos. The owner's name, PHAISSTIO, is seen inscribed on the bottom. Height of cup 14 cm.

guished from those of the next. This is true of a type of wine cup found in our well, an example of which is shown in the figure on page 196, flanked on the left by one of its forerunners, from the early fifth century B.C., and on the right by a descendant, from the third quarter of the fourth century. The most obvious development is the gradual narrowing of the base, but there are other points, such as the curve of the walls and the size and shape of the handles.

Sometimes, on the other hand, a shape endured tenaciously for a century or more, with only trifling changes. An example is the round-bodied jug with narrow neck, probably designed as an oil cruet. This too was found in the well. The type had long been known, but was not thought to have been in use after the end of the sixth

## POTTERY FROM PERICLEAN ATHENS *continued*

century B.C. New evidence has now made it clear that the globular lekythos, to use its technical name, was used in Athens throughout the fifth century as well.

Sometimes a shape simply went out of existence and was superseded by another. An illustration of this is provided by the two jugs shown on page 197. Both are of the ordinary, everyday variety. The one on the left is an example of a type that was used in Athens from the seventh century to the mid-fifth century B.C., while the one on the right is not known to have existed at Athens before the latter date.

In the preparation of the technical account it is necessary to ask whether the existing sequence for each shape or category can be confirmed or revised. The evidence of the pottery is especially important because it is to be used not simply for itself but in conjunction with other findings, to establish the date of architectural remains or to supply evidence about foreign trade or generally to enlarge and illumine our knowledge of the past. Insofar as this particular well is concerned, only a brief span of twenty years is covered, but this deposit is merely one of

many. Their value is to be judged collectively, for they yield an accurate ceramic sequence that stretches, with few gaps, from 3000 B.C. to modern times.

That such a sequence can be established is due to the fact that every scrap of pottery, however humble, has received due attention. So much solicitude has not always been shown to fragments, nor indeed to whole pots, if undecorated. Connoisseurs of Attic pottery have usually reserved their appreciation for the figured vases of the sixth and fifth centuries B.C. The Etruscans were the earliest of these connoisseurs, and most of the finest Attic vases have come from their tombs, in particular from the great cemetery at Vulci, discovered in 1828 on property belonging to Lucien Bonaparte, Prince of Canino and brother of Napoleon. Over three thousand painted vases were recovered in the first year of excavation alone. There is an account of the method of excavation in George Dennis' *Cities and Cemeteries of Etruria* (London 1848). He describes the operations of the workmen as follows:

"We found them on the point of opening a tomb. The



An ostrakon—potsherd used as a ballot, in this case for the purpose of ostracizing the great Athenian leader, Pericles, son of Xanthippos.



Three skyphoi (above) showing the development of this type. At the left is an early fifth century cup, the middle one comes from the well, and that at the right is a fourth century example.



Three jugs, or cruets. This type of vessel did not change in shape for more than a century. The one in the center came from the well, that at the left is earlier, the one on the right is later.

roof, as is frequently the case in this light, friable tufo, had fallen in, and the tomb was filled with earth, out of which the articles it contained had to be dug in detail. This is generally a process requiring great care and tenderness, little of which, however, was here used, for it was seen by the first objects brought to light that nothing of value was to be expected—*hoc miserae plebi stabat sepulcrum*. Coarse pottery of unfigured, and even of unvarnished ware, and a variety of small articles in black clay, were its only produce; but our astonishment was only equalled by our indignation when we saw the labourers dash them to the ground as they drew them forth, and crush them beneath their feet as things 'cheaper than seaweed.' In vain I pleaded to save some from destruction; for, though of no marketable worth, they were often of curious and elegant forms, and valuable as relics of the olden time, not to be replaced; but no, . . . the *capo* was inexorable; his orders were to destroy immediately whatever was of no pecuniary value."

Excavations are at present conducted under quite different conditions, and "coarse pottery of unfigured, and

even of unvarnished ware" has risen in esteem, among archaeologists at least, since the days when the Bonapartes were realizing the fortunes left them by the Etruscans. But the general notion of Greek ceramics is still one-sided, reflecting the attitude that prevailed a century ago. It is likely, however, that the recently acquired knowledge of the equipment of Athenian kitchens will produce a more balanced view of the character of Greek ceramics. The great vases, by their very perfection, have often attracted from critics a hostility that has been visited also, and for the same reason, upon other things Greek. One has gone so far as to complain that the profiles of Greek vases are "cold, sleek, and insensitive." What complaints of this sort mean—if they mean anything—is apparently that the Greek potter exercised too great a mastery over his clay, and that the finished product does not suggest the medium of which it is composed. Whether this is just or not may be left aside for the moment. But the reader might glance at the vases shown here and ask himself whether he could ever be mistaken about their essential ceramic quality.

Two jugs. At the left is an early type which died out and was replaced by the one at the right. The latter seems to have a better lip for pouring.

A selection of objects (below) from the mass of material in the well. Top row, left to right: a kantharos, a kothon, a skyphos, two loom-weights, a lamp, a dish. Bottom row: a bowl, an amphora, a brazier.



Photographs by Alison Frantz

# BRONZE AGE BURIAL RITUAL IN THE LOW COUNTRIES



1. Bronze Age barrows as they appear after restoration, at the Rechte Heide, near Goirle, Netherlands (after A. E. van Giffen).

By SIGFRIED J. DE LAET and WILLEM GLASBERGEN

*Translated by J. Nenquin*

**T**O THE CASUAL OBSERVER great wealth seems one of the main characteristics of Europe during the Bronze Age, which lasted from about 1500 B.C. to about 800 B.C. This is the case at "golden Mycenae," as Homer called it, in faraway Ireland, in the splendid Aunjetitz and Toszeg cultures of central Europe, in England, where merchandise from all of western Europe was brought by the traders of the Wessex culture, in the Po Valley, and in Denmark, where bronze casters attained astonishing skill. Overseas trade developed even more than during the previous Neolithic period, and new overland trade routes were established. Contacts between the Mediterranean world and western, central and northern Europe became more and more numerous, and civilization advanced very rapidly. But in certain parts of western Europe this general picture of wealth seems completely absent, owing to the fact that these regions had none of the raw materials on which this world trade thrived. In the Low Countries (the Netherlands and Belgium) no copper, tin, gold or amber were to be found. The Bronze Age inhabitants of these regions seem to have been poor peasants whose contacts with their neighbors were very limited. It is exceptional to find Bronze Age objects of intrinsic value—a few implements and weapons, now and again a precious imported piece, evidence of a visit of traders from foreign parts. The most striking

characteristic of the Bronze Age culture in the Low Countries is its poverty.

Most of the material from this period is found in low burial barrows (Figure 1). Cultural objects are generally absent; occasionally an implement or an ornament may come to light. For this reason the Bronze Age is poorly represented in museums, in contrast to the hundreds of Iron Age urns which may fill an imposing number of showcases. When a large barrow-cemetery is plowed in the course of land reclamation, a lucky amateur or museum may collect a few potsherds and perhaps a fragment of oxidized

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• The excavations here described were conducted on both sides of the frontier between Belgium and Holland, and the authors are, correspondingly, from these two countries. Dr. De Laet is a native of Ghent. He received the Ph.D. degree at the University of Ghent (1937), and his teaching career has been at that institution, where he was appointed Professor in 1947. Study and excavation have taken him to other European countries as well as to the United States. Dr. De Laet's numerous publications include volumes on Roman history as well as on prehistory. His latest work, a general study entitled *Archaeology and its Problems*, has appeared in English, Danish, Dutch, and French editions. A review of this book will appear shortly in *ARCHAEOLOGY*.

Dr. Glasbergen was born at Nordwijk and studied at the University of Groningen (Ph.D. 1954). Keeper of the archaeological museums of Groningen and Assen from 1955 until recently appointed Professor at the University of Amsterdam, Dr. Glasbergen has excavated in the Netherlands, first specializing in the Roman period, later in prehistory. His main publication is *Barrow Excavations in the Eight Beatitudes* (1954).



bronze. All evidence of structure is destroyed by the plow and lost forever. And it is just this evidence which is so important in enabling us to learn something about the activities of men who lived here a thousand years before the beginning of our era.

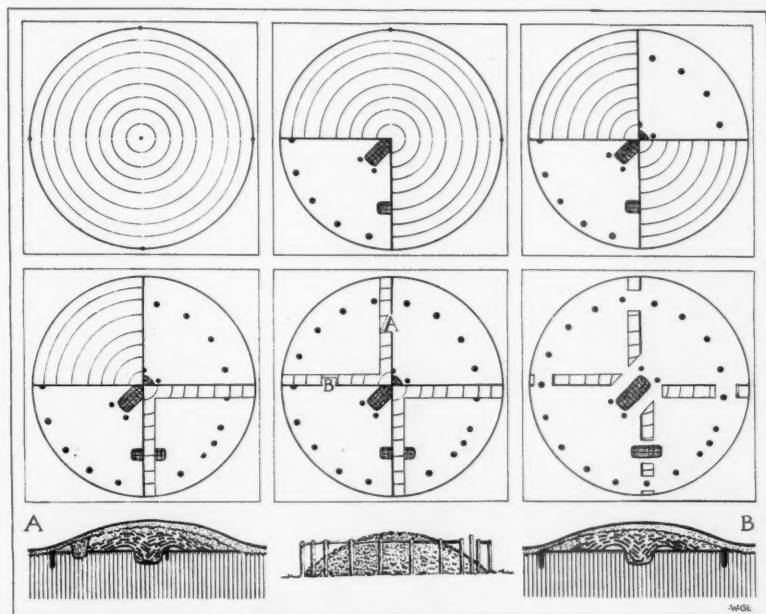
Only systematic excavation—such as was started in the Netherlands by Dr. J. H. Holwerda at the beginning of this century—enables us to gather all the data about a prehistoric monument. Observation and interpretation of soil-marks (marks left in the earth by the rotting away of posts, the filling in of post-holes, ditches and other transient structures) have brought about a revolution in archaeology. Not only have details of construction come within the reach of the archaeologist, but at the same time he can guess at prehistoric man's ways of thinking and acting. Artifacts, once our only source of knowledge, can now be incorporated into their environment. Circumstantial evidence has become the main purpose of scientific soil investigation.

Our picture of the Bronze Age in the Low Countries has been formed mainly by the work of Dr. A. E. van Giffen. In 1916 he initiated the so-called quadrant method, which makes it possible to study a monument in horizontal and vertical planes at the same time, and thus to get the maximum of data in a minimum of time (Figure 2). This method soon became widespread. Van Giffen's barrow investiga-

tions, for the most part in the province of Drente, form the basis of our present studies. Besides typology and stratigraphy, van Giffen has used pollen analysis, the examination of cremated bones, and radiocarbon tests. By such treatment a burial mound can become a most important document for the study of prehistory, even without a trace of implements of any sort.

Should we then say that the archaeologist studying the remains of this period will have to face a rather tedious task, without the prospect of a rich reward? If his purpose is to discover treasures in precious metals, the answer may be affirmative. If, on the other hand, he wishes to recreate the daily life of man in these regions, far from the cultural centers of the time, his struggle for existence against natural and supernatural powers, then the material found on the heaths of the Campine region and of Drente is rich indeed, paradoxical though it may seem. Though the burial mounds are poor in products of human industry, they are instructive about man himself and his mentality.

EVEN IN MODERN BURIALS one can distinguish two sorts of acts. On the one hand are the acts necessary for the burial itself. The digging of the grave, the lowering and covering of the coffin are essential and obvious. But the ringing of the church bells (per-



2. Successive phases in excavating a barrow by the quadrant method of Dr. A. E. van Giffen.

## BRONZE AGE BURIAL RITUAL *continued*

haps originally to drive away malevolent ghosts?), the thrice repeated procession around the churchyard (to put these same ghosts on the wrong track?), the scattering of a handful of earth upon the coffin—these may be interpreted as customary acts with a sometimes hidden magical background.

Burial of the dead is one of the oldest human practices. Graves are the monuments of human culture which most effectively withstand the ravages of time, because for the most part they have been *dug into* the soil and thus have left visible marks. The earth is an immense storehouse of archives, becoming richer every day, and the individual documents it contains belong mostly to the category of graves.

Apart from necessary acts in connection with burials one must not forget the customs which in prehistoric times were derived from taboos, animistic ideas, and so on. One still finds these today in primitive societies. Remnants of funeral feasts, pits for libations, mortuary houses, etc. may be regarded as the results of magical or ritual acts. Such acts may remain unaltered for many generations, transmitted from father to son long after they have lost their original ritual significance.

The conduct of prehistoric man's life was probably determined to a large extent by his conceptions of life and death and by his image of benevolent and malevolent demons. Clear evidence for the belief in this invisible world is very difficult to come by. But we have learned certain facts that may eventually help to lift the veil covering the mind of prehistoric man. And this is one of the most fascinating as well as most difficult subjects in the study of prehistory.

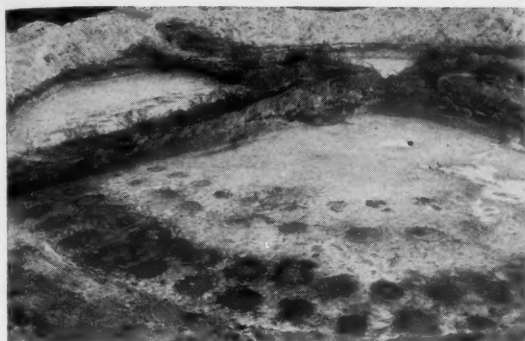
In 1902 the Belgian excavator Stroobant ended a few remarks on prehistoric burial ritual with the pessimistic words: "These rites remain for us an unfathomable mystery." Stroobant seems to have been one of the first to think about magical acts in relation to prehistoric burial in the Low Countries. He and a few others noted that small vessels had been placed *upside down* in Iron Age urns. This could not have happened by accident, and might be explained by the custom of pouring a symbolic liquid over the body of the deceased. Before 1910 it was impossible for research workers to go beyond these vague hypotheses. An excavation was nothing more than digging for objects, which by themselves could give little information about the cultural acts in which they might have been used. Hence Stroobant's words were quite understandable.

The barrows excavated after 1920 by van Giffen and his pupils form the basis of our knowledge of Bronze Age burial ritual. The facts may be classified as those related to the grave and its immediate vicinity, and those related to the edge of the barrow. Needless to say, only a complete study of the monument can give an over-all picture of the activities before, during and after the interment. Despite much excavation one cannot hope for a well proportioned picture of Bronze Age burial ritual in all parts of the Low Countries. Only for a few regions can this picture now be complete. Most of our information comes from excavations in the province of Drenthe and in the Campine district (on both sides of the Belgian-Dutch frontier).

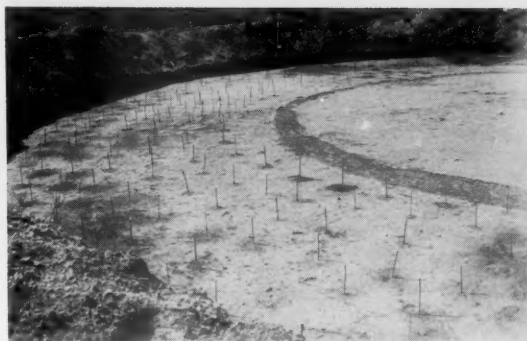
Generally speaking, a Bronze Age date is suggested by a mound made of heather sods, whereas Late Stone Age tumuli consist of relatively clean sand. Another dating factor is the podzolization\* of the subsoil. The type of grave, the type of timber circle which surrounds it and, most of all, pollen analysis are decisive. In some cases an approximate absolute date has been given by means of Carbon-14 tests.

Inhumation was the rule in the Late Stone Age. In the Beaker cultures (ca. 2100—ca. 1600 B.C.) the dead were generally buried in a flexed position. Most of the Early Bronze Age burials are in coffins made from sections of the trunk of a thick oak split on the long axis. Both the coffin and its lid were hollowed out by means of fire. The coffin was placed in a deep pit and then covered by a heather-sod mound. Later interments of the same type may sometimes be found at the summit or, more often, in the sides of the tumulus. Soon, however, cremation burials became common. At first the cremated bones were recovered from the funeral pyre and deposited in a long tree-trunk coffin, the outward appearance of the grave remaining the same. This is called a "cremated skeleton grave." Gradually the length of coffin and grave decreased, and finally the cremated bones were buried in an irregular shallow pit, together with charcoal from the pyre. A still later phase was the erection of a grave mound over the remains of the pyre. During the Middle Bronze Age, about 1400 B.C., invaders from England introduced the custom of burying the cremated remains in an earthenware vessel, or urn. With the invasions of Iron Age Urnfield folk from the southeast, about 800 B.C., urn burial became general.

\* The process of development of the poor, grayish (podzolic) soil characteristic of areas in moderately high latitudes with cool humid climate.



3. Tumulus 19 in Toterfout-Halve Mijl cemetery. The barrow shows two periods, with two double, closely spaced post circles. The southwest and northwest quadrants are shown.

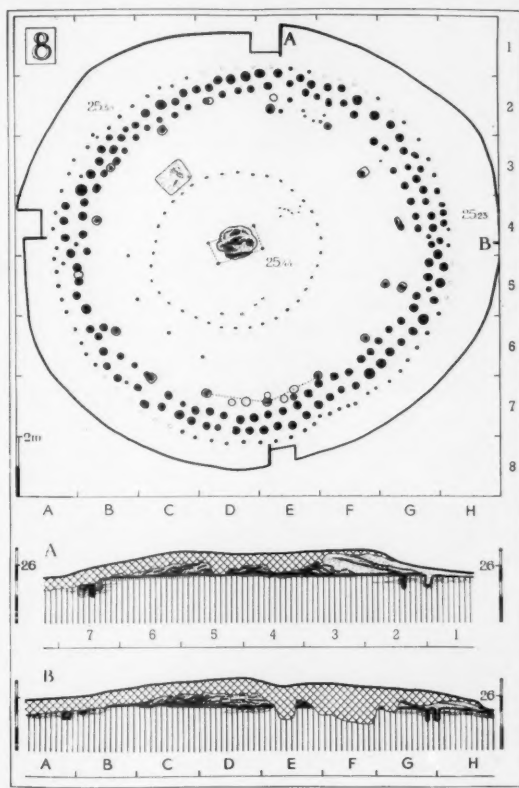


4. Tumulus 22 in Toterfout-Halve Mijl cemetery. The southern part of the mound, with eight rows of posts and part of the ring-ditch. About 520 pegs mark the postholes.

Until recently this development seemed a safe chronological criterion for the Low Countries in general. Excavations during the last few years, however, have made it seem less trustworthy. For Drenthe the picture remains practically the same, but it appears that in Campine during the Middle Bronze Age inhumation and cremation were practised at the same time. This must be explained by several factors. The eschatological ideas of Bronze Age man are important, but clan traditions may also have played a part—do we not see that in Classical Rome different families practised different ways of burial? Most of all, one must bear in mind the circumstances of death of those buried. But more about this later.

Although a number of customs related to burial ritual have become known through research in the last three decades, much new light has recently been shed on the subject by excavations in the Campine region, specifically those (1948-1951) in the "Eight Beatitudes" (municipality of Veldhoven, province of North Brabant, Netherlands) and at Postel (municipality of Mol, province of Antwerp, Belgium). We cannot enumerate all the cases in which traces of "magical" or "ritual" acts have been observed. A few examples will be chosen from the growing collection of evidence for the attitude of Bronze Age man regarding life and death.

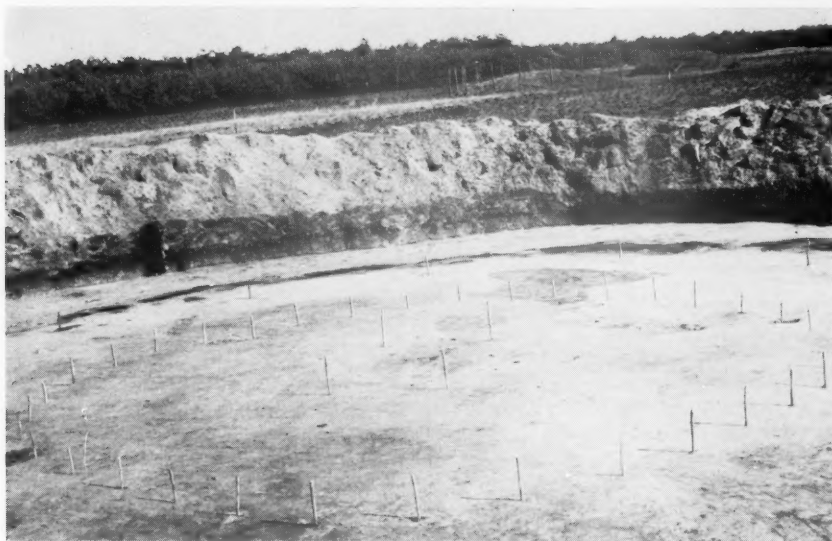
THE BARROW CEMETERY between the hamlets of Toterfout and Halve Mijl, in the so-called Eight Beatitudes, is situated on the summit of a low sandy ridge, in a region of fens. The grave mounds are grouped around several centers over a distance of about two kilometers. Some are surrounded by circular banks, others by circular ditches, but most of them by timber circles. In the Dutch timber circles, several types can be distinguished. The earliest are single, closely spaced circles of posts



5. Tumulus 8 at Toterfout-Halve Mijl: plan and sections.

set in a foundation trench; these are Neolithic and are not found in the grave group under discussion. In the Bronze Age various kinds of post circles were used (Figures 3 and 4): single, widely spaced post circles; widely spaced, paired post circles; single, closely spaced

## BRONZE AGE BURIAL RITUAL *continued*



6. Tumulus 8 in Toterfout-Halve Mijl cemetery. At this stage the cremation burial has been removed, but around it can be seen the four posts of the temporary mortuary house which covered it. Also visible is the temporary stake circle and the definitive post circle of Period I, all marked by white pegs. Outside these, dark spots made by iron pan precipitation indicate where the posts of the Period II circle stood. In the background are Tumuli 5 and 6 as restored after excavation.

post circles; double, triple, quadruple and multiple post circles; lastly, single, closely spaced circles of stakes. In this last type it may be assumed that wattling was generally used between the stakes; these stake circles may form an external element additional to a main post circle. Apart from the constructions around the base of the monuments, this barrow group provided much information about burial ritual. Mortuary houses, cremations in post-holes, entrance blockings in timber circles, ritual pits, etc. betrayed something about the world of the Bronze Age inhabitants of the Eight Beatitudes. It is impossible to mention all the results of the excavation of this cemetery, but one of the barrows offered so much new material that a description of it and the results of investigating it will touch upon most of the problems of Bronze Age burial ritual.

Tumulus 8, one of four big barrows in the center of the cemetery, had been flattened in September 1944 by the maneuvers of Allied tanks, preparatory to the attack on Arnhem. This barrow proved exceptionally important; never before had the evidence for such an elaborate series of ritual acts been observed in a single barrow.

Excavation was carried on by the quadrant method (Figure 5). From the very beginning the sections proved to be quite instructive. On top of a clearly pod-

zolized level surface (with humus band and leaching layer, under which was the yellow sandy subsoil) was the core of the tumulus, made of inverted sods of the same composition as the original surface. These sods had obviously been cut in the immediate neighborhood of the mound. The core-mound had then been capped by layers of peaty, humous, pitch-black sods: these had clearly been cut in a humid place, probably near the fens which extended to within a short distance of the south side of the tumulus. Finally, the mound had been smoothed over with a layer of yellowish-brown sand. Above this was a clear band of humus: the surface of the mound in the first period.

This surface was sealed beneath a second layer of sand corresponding to a second construction period. The depth of this layer could not be ascertained because years ago the mound had been partially plowed. The top layer therefore consisted of recently disturbed soil. The two construction periods, which showed clearly in profile, became even more apparent from the ground plan. Although at first sight the plan was an inextricable tangle of post-holes and other marks, it became possible by closer study to distinguish several constructional phases. In describing these we shall proceed from the center toward the edge of the barrow.



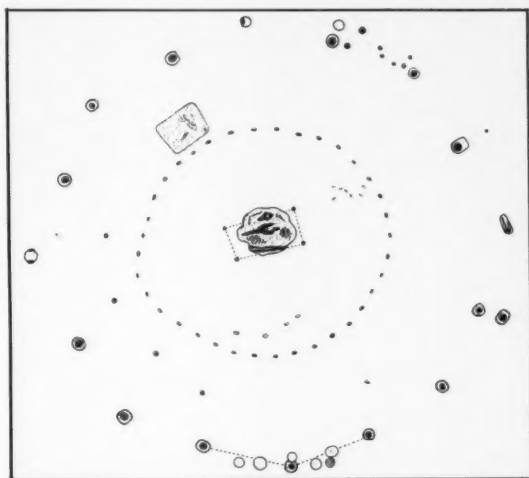
At the center of the tumulus was found a shallow pit filled with charcoal and fragments of cremated bone. The charcoal was probably still glowing when thrown into the pit, because the surrounding sand had turned red from the heat. Carbonized shells of half-burned stakes were found in the grave pit; the unburned cores had decayed and filled with sand.

The grave—doubtless the primary interment—was situated within a rectangle (1.60 m. x 0.80 m.) formed by four stake-holes. Around this rectangle was a more or less oval ring (diameter: 5.20 m. x 5.80 m.) of very small stake-holes. In the northwest, beyond the stake circle, was discovered a large gray stain containing some charcoal. Within and without the stake circle were a few irregularly placed stake-holes (Figures 6 and 7).

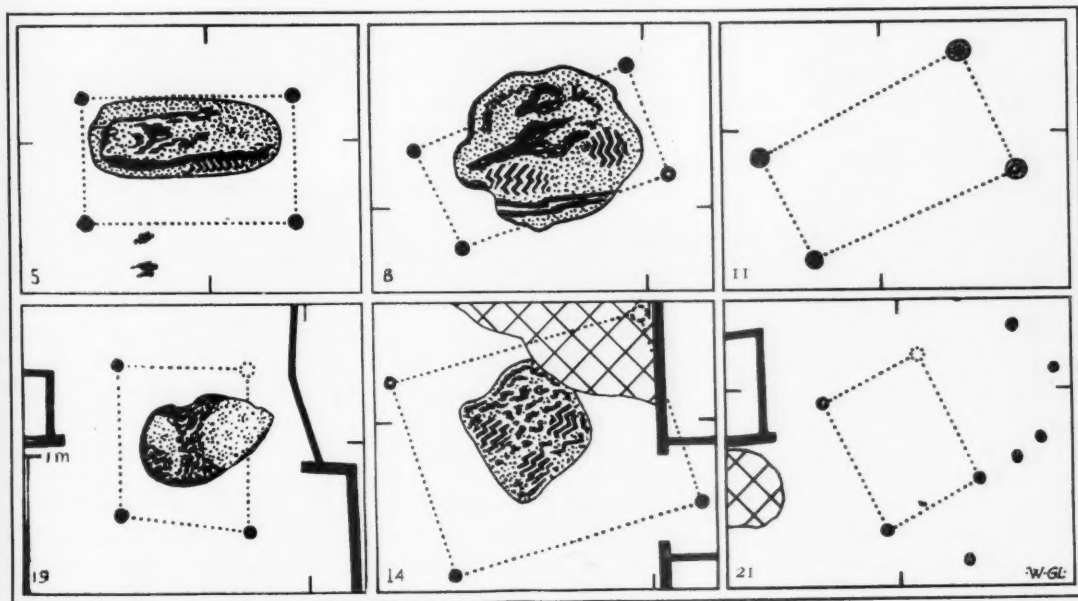
A broad ring of post-holes beneath the edge of the barrow proved to consist of two separate circles, corresponding with the two periods of construction. Nearer the center was a circle (diameter 10 m.—10.90 m.) of sixteen widely spaced post-holes; in most cases the exact position of the post appeared as a dark, soft filling. A few paired post-holes occur, and to the west the post-holes seem to be somewhat irregularly placed. Where a post-hole is cut by a section, it is shown standing on the spot where the surface of the primary barrow meets the old level surface under the barrow: at the foot of the primary mound. With a slight northeasterly shift regarding this first circle, one can see an oval, closely

spaced double post circle (internal diameter 10 m.—11.20 m.). In section it was observed that these posts stood at the edge of the Period II barrow. It was noted that on the southwest side this post circle was single instead of double.

One fact proved of the utmost importance: the four stake-holes around the primary grave and the stake-holes



7. Plan of Tumulus 8, Toterfout-Halve Mijl cemetery, showing only timber circles and other remains of the first period.



8. Plans of mortuary houses in barrows 5, 8, 11, 19 and 21 in Toterfout-Halve Mijl cemetery.



## BRONZE AGE BURIAL RITUAL *continued*

of the surrounding circle—all under the core of the mound—did not extend above the original surface. Therefore it was clear that the stakes which once stood in the holes had been removed before the actual mound was built.

Tumulus 8 thus gives evidence of a series of acts executed before, during and after the interment of the deceased. Nowhere more clearly than here can one grasp something of the real meaning of the burial ritual. The sequence runs as follows:

1. The cremation of the body on a pyre, probably very near the burial spot (witness the burning wood thrown into the pit).

2. The interment in a shallow oval pit of the cremated bones and charred wood collected from the pyre.

3. The protection of this interment by a small, temporary shelter ("mortuary house") consisting of a roof supported by four stakes (Figure 8).

4. The enclosure of this mortuary house by a temporary circle of slender stakes, probably supporting a fence of hurdles.

5. The holding of a funeral feast outside the stake circle by members of the clan (unless the charcoal spread represents the remains of a purificatory fire or perhaps of the pyre).

6. After a lapse of some days the removal of the mortuary house and the stake circle.

7. The construction over the interment of a barrow, the core consisting of sods cut nearby, the covering made of sods cut near the fens; the smoothing over of the barrow with sand, giving the rather uneven heap the aspect of a regular, dome-shaped mound.

8. The erection around the edge of the barrow of a single, widely spaced circle of posts. These posts may have been connected by cross-pieces.

9. The blocking, by means of posts, of an entrance the width of two successive intervals, which had been left open on the south side. A fire-pit was observed here, perhaps the trace of a ritual fire used during the ceremonial blocking of the entrance to the post circle.

Then followed an interval of at least ten to fifteen years—the time needed for the decay of the posts. The barrow was covered by vegetation. The prevailing south-westerly winds caused the mound to increase slightly on the lee. Because of this there was a corresponding shift of the original center. A lucky consequence of this change of center in Dutch tumuli has been that clandestine treasure-hunters would dig in the apparent center of a mound, not knowing that the original center—as a rule concealing the burial—was hidden not far

to the southwest. In many cases, therefore, the grave barely escaped!

10. A new interment (cremation?)—destroyed by recent disturbances—on the crest of the mound was the motive for enlarging it. Because of the displacement of the mound center owing to the prevailing winds, this new capping was placed slightly toward the northeast.

11. The edge of the barrow was surrounded by a closely spaced double circle of posts, left open for a distance of two meters on the southwest side.

12. Lastly, the entrance to this post circle was blocked by a single, closely spaced row of posts, and the mound was surrounded by an enclosing circle of close-set slender stakes, presumably linked by horizontal hurdling.

After the second interment the barrow was left alone, except for accidental damage in the nineteenth and twentieth centuries. The study of this barrow has thus provided us with quite a number of structural details showing a series of acts, partly of necessary character; most of them, however, have only ritual significance.

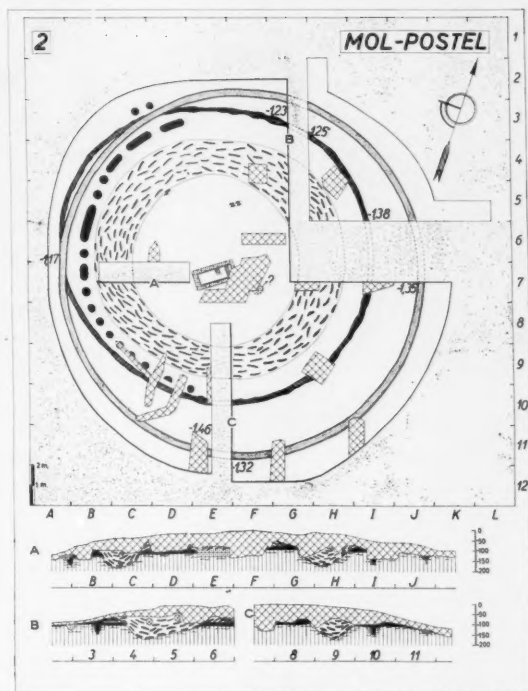
What is the date of the primary grave? In excavating, no object was found which might help to determine its age. Generally speaking, the barrow could be regarded as belonging to the Bronze Age, by reason of the sod structure and the type of post circles. This date was later confirmed by pollen analysis. It remained an open question whether the barrow was to be assigned to the Early, Middle or Late Bronze Age, although the Middle Bronze Age seemed to be indicated. Pollen analysis and comparison with the other grave mounds of Toterfout-Halve Mijl seemed to show that Tumulus 8 belonged to the cemetery's middle phase. A tentative date of about 1100 B.C. seemed plausible. Charcoal from the primary grave, submitted to Professor Dr. Hl. de Vries in Groningen for radiocarbon examination, gave an age of  $3055 \pm 90$  years. This means that the barrow was probably built between 1200 and 1000 B.C., therefore in the Middle Bronze Age, and the original guess—about 1100 B.C.—does not seem far from the truth!

Who was the person for whom such a complicated burial ritual was staged? Someone of importance? Or someone who even after death could continue to strike fear into the living, so that he had to be bound to his grave by magical means, by repeated encircling with wooden uprights? Examination of the cremated bones brought a great surprise—the grave was that of a child less than seven years old. Many questions crop

up as a result of this discovery. And although a definite answer may never be given, it may be possible to find out something more about the essence of Bronze Age burial ritual.

LET US NOW GO to the other side of the Dutch-Belgian frontier. On the wide heaths and in the fir woods between the old Norbertine abbey of Postel and the frontier, on the dividing line between the Belgian provinces of Antwerp and Limburg, is a rather important cemetery of about twenty barrows. Up to now only two barrows have been excavated. Tumulus 2, investigated in March-April 1954 by the quadrant method, proved to be of exceptional interest. Although it had been rather badly damaged by farmers carting away sand and by rabbits whose warrens honeycombed the interior, and although it had been partially flattened, nevertheless it was possible to distinguish three construction periods (Figure 9).

The first mound, built on top of an old podzolized surface, belongs to the type called "barrows with enclosing bank and ditch," or "bowl-barrow with outer bank," but the structure (Figure 10) is rather more complicated than is usual in burial mounds of this type. The grave itself, oriented southwest-northeast, was practically undamaged; it contained a long coffin made from a fire-hollowed oak, placed in a pit. Although the coffin's dimensions (1.75 m. x 0.60 m.) suggested inhumation, cremated bones were found in it. The remains of the bones, studied by Professor F. Twisselmann of the Royal Institute for Natural History in Brussels, were found to belong to a rather short person (about 1.52 m., or a little under five feet in height), very probably female, and between nineteen and twenty-five years of age. In some places around the grave the sods had been cut from the old surface; later a mound about eight meters in diameter, consisting of light humous sods, was constructed on top of the grave. A deep ditch (average depth 90 cm. below the old surface) about two meters wide surrounded the barrow in a more or less oval shape. The digging of this ditch provided earth for the construction of a surrounding bank, about 1.20 m. wide and extending 40 cm. above the old surface. The whole structure approximates a circle, being 15.50 m. long and 14 m. wide. The bank-and-ditch barrow was introduced into the Low Countries by invaders from England. One structural element, however, belonged to an autochthonous tradition: seventeen post-holes found on top of the bank. These formed a semicircle



9. Tumulus 2, Mol-Postel cemetery: ground plan and sections.



10. Tumulus 2 in the Mol-Postel cemetery. The northwest quadrant is shown here, seen from the west. Visible are the ditch, filled with sods, and the outer bank (to be seen on the profile surface) of the first period, the foundation trench (marked by iron pan precipitation) of the second period and the ring-ditch of the third period.

## BRONZE AGE BURIAL RITUAL *continued*

on top of the west side of the mound; on the east side nothing of the sort was observed. Without doubt these post-holes belong to the first period, for in section it could be seen that in places they had been covered by the sod filling of the ditch (Period II—see below). All these post-holes extend to a depth of 20 cm. under the old surface. Eleven of them are round, one (which may have been made by a pole split lengthwise) is shaped like a half-moon, five are oval (the longest measuring 1.80 m. x 0.45 m.). In another bank-and-ditch barrow, the "Zwartenberg," "Black Mound" (municipality of Hoogeloon, North Brabant, Netherlands), a similar semicircle of posts has been found.

The Middle Bronze Age date of the mound was confirmed by pollen analysis and radiocarbon tests. The latter gave a date of  $3225 \pm 120$  years; therefore the barrow was built between 1390 and 1130 B.C.

There are reasons to doubt whether the work originally planned on the tumulus was ever completed. Several facts suggest this: only *half* a circle of posts has been found, and these posts seem to have been removed before their decay (to make this easier a trench may have been dug to connect two consecutive posts, the long oval post-holes being the mark of two posts connected by such a trench); the absence of silt in the bottom of the ditch; lastly, the pollen analysis proving that Period II followed very soon after Period I. In any case, shortly after the erection of the barrow, the structure was radically changed. No grave of the second period could be found, because of damage to the tumulus; moreover, it is not certain that the change in construction was related to a new interment. We got the impression that during the erection of the mound it was suddenly decided, without apparent reason, to change the structure of the grave and to build a barrow of another type. Heather sods—which analysis shows are of the same date as those forming the mound of Period I—were stacked in the ditch between the bank and the actual mound, forming a single slope from the foot of the bank to the crest of the barrow. By this time the partial circle of posts on top of the bank had disappeared, and the edge of the tumulus was indicated by a narrow circular foundation trench (25 cm. wide, 60 cm. deep) under the old surface. In this trench had been erected a palisade of slender stakes, visible in section as light discolorations. Barrows with closely spaced single timber circles in a foundation trench are usually considered Neolithic, but here we see that such

archaic constructions continued well into the Middle Bronze Age.

Much later (Period III) the mound was again increased in height. In the meantime the prevailing westerly winds had eroded the west side of the barrow, depositing quite a large heap of sand on the lee side and shifting the apparent center of the mound about two meters eastward. The capping was of the type of the ring-ditch barrows, and a shallow circular trench, V-shaped in section, had been dug at the foot of the mound. To the west, this ring-ditch cuts twice into the foundation trench of the palisade of Period II. The Period III barrow is almost perfectly circular (diameter 18 m.). The grave of this period was only partially damaged; the cremated bones of a young adult of indeterminate sex were buried in an urn of the so-called Drakenstein type (Montelius' Period IV, 1100-800 B.C.). It was noted that the lip of the urn showed traces of black incrustation, the remains of food, indicating that it had been used as a cooking pot before it was made to serve as a funerary urn.

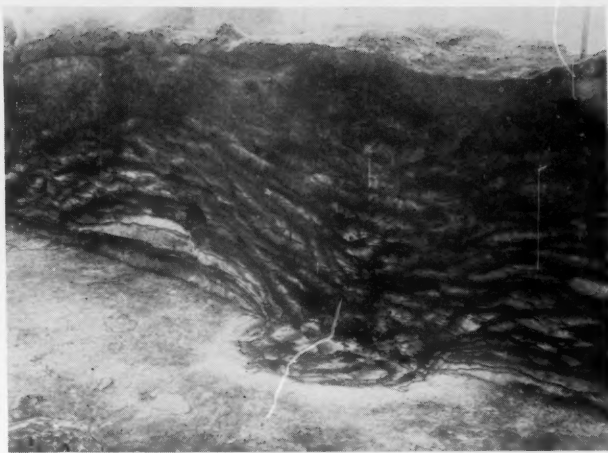
One sees that besides the necessary acts a series of magical or ritual acts had been performed, more or less related to those noted for Tumulus 8 of Toterfout-Halve Mijl, but nevertheless different in many details. And again new questions arise. For the young woman, for instance, why was a foreign type of grave first erected, with certain autochthonous elements, it is true, and why was this grave suddenly changed into a monument of an archaic type? Does this indicate the arrival of invaders from England and their contact with the native population? Does one see here the traces of a family conflict between foreign modes and old-fashioned clan traditions? So many questions that may never receive an answer . . .

IN THE EXAMPLES GIVEN we have seen traces of several ritual acts and various kinds of construction—mortuary houses, post circles, ring-ditches, a funeral feast—all indicated by evidence observed beneath the barrows or at their edges. One category remains to be illustrated: the ritual pit.

The best examples of ritual pits have been found beneath Tumulus 1 of the Toterfout-Halve Mijl cemetery. This was the largest tumulus of the whole group, more or less oval and surrounded by a bank. The mound was about 1.50 m. high, and its imposing aspect was emphasized by its position on the summit of a long slope. The external diameter of the sur-



11. The two ritual pits of Tumulus 1, Toterfouthalve Mijl cemetery, from the west. Center of barrow shown after removal of primary burial.



12. One of the ritual pits of Tumulus 1, Toterfouthalve Mijl cemetery, from the southwest. Earth cast up from the pit can be seen on the old ground level at its left. The sods clearly show subsidence in the pit.

rounding ditch was thirty-seven meters. At the center of the barrow, at ground level, on the long axis, a large oval cremation was discovered. On each side of this interment a pit (roughly quadrangular, length about 1 m., depth about 75 cm.) showed clearly against the yellow virgin soil (Figure 11). The pits had lain open for a short time; some of the yellow sand—visible around the pits as a small bank overlying the old surface—had slipped back in, forming a thin layer at the bottom. The pits were then filled with dark sods: these were clearly visible in section (Figure 12). The pits cannot have been intended for posts, as in that case traces of decayed or removed timber would certainly have been found; there was not a single indication of this even after very careful examination. It is certain that both pits and the central cremation at ground level had been covered with sods at the same time. They must therefore have served some function in the burial ritual. It has been suggested that they were used as a sort of sacrificial pit—for example, for the pouring of blood libations to the powers of the underworld. The cremated bones appear to belong to two adults (probably women) and two or three children under seven years of age. Similar ritual pits are not rare in western Europe during the Bronze Age. In England they have repeatedly been observed in immediate connection with ritual acts. And perhaps one may quote here the well known passage from Homer's *Odyssey* where the poet describes how Odysseus, after his arrival in the land of the Cimmerians, brings an offering to the ghosts of

the underworld, before conjuring up the spirits:

*The victims, vow'd to each Tartarian power,  
Eurylochus and Perimedes bore.*

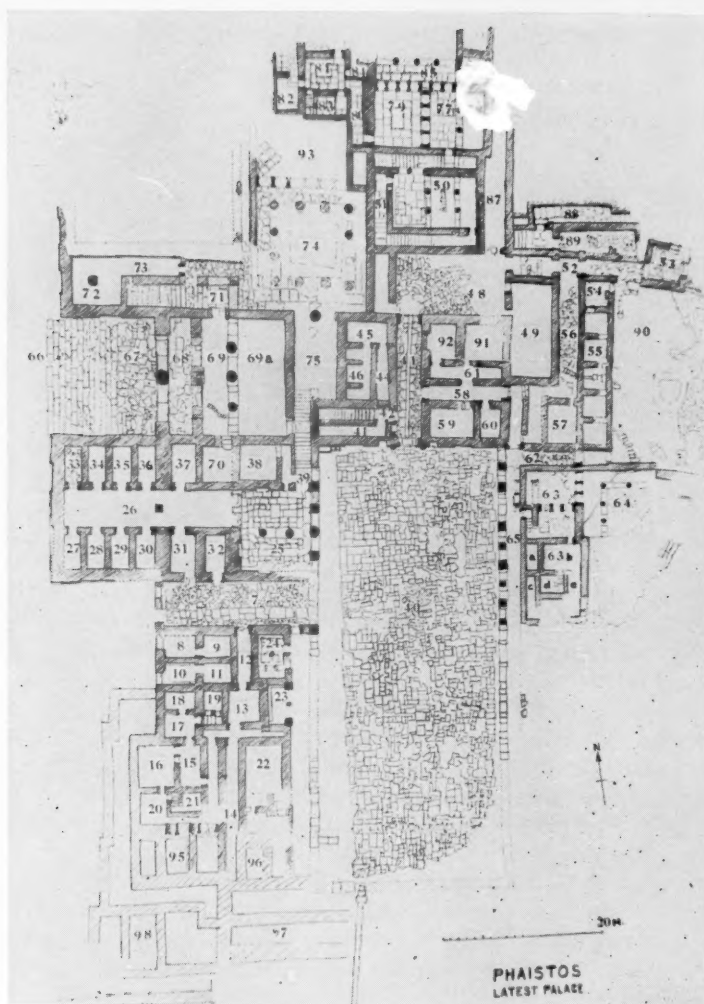
*Here open'd hell, all hell I here implored,  
And from the scabbard drew the shining sword:  
And trenching the black earth on every side,  
A cavern form'd, a cubit long and wide.  
New wine, with honey-temper'd milk, we bring,  
Then living waters from the crystal spring:  
O'er these was strew'd the consecrated flour, . . .*

(Book XI, translation of Alexander Pope).

These few examples may suffice to prove that careful excavation, even though it may not yield spectacular objects, may teach us quite a lot about Bronze Age man. The magical or ritual acts which we have seen him perform—and of which the traces are still visible after three thousand years!—allow us to guess something about his attitude towards the forces of darkness which, in his mind, dominated the mystery of life and death. What was his motive in building a large grave monument, in holding a funeral feast, in performing certain ritual acts, in surrounding the grave with a circle of posts, a ring-ditch or a circular bank? The motive was more than the social importance of the deceased; it may be assumed that special circumstances of death or animistic conceptions were the real cause. Excavation has lifted a corner of the veil, but innumerable problems remain unsolved. Despite this they remain the more fascinating to the investigator, trying as he does to wrest from the soil the secrets of the darkest past.



By J. Walter Graham



Sketch plan of the royal palace at Phaistos. Shown here is the great central court where the bull-games are believed to have been held (40); the west entrance with the wide stairway (66-69) leading to the state apartments (over 25-39, 70) and, at the top (north), the apartments occupied by the royal family (50-51, 77-86).

# PHAISTOS—

## *Second Fiddle to Knossos?*



• The author is Associate Professor of Art and Archaeology in the University of Toronto, and Curator of the Greek and Roman Department of the Royal Ontario Museum. During the summer of 1955 he traveled in Greece, with the aid of grants from the American Philosophical Society and the University of Toronto, in connection with a series of studies of Bronze Age palaces, especially those of Crete. Technical articles based on the studies are appearing in the *American Journal of Archaeology*.

**K**NOSSOS—long has it been famous for the tales Greek story-tellers told of the dread Minotaur and the labyrinth built to contain it by the craftsman Daedalus; of King Minos, son of Europa, princess of Tyre, and Zeus who wooed her in the guise of a great white bull; and of Minos' daughter, Ariadne of the fair tresses, and the hero Theseus whom she helped to escape from the labyrinth after he slew the monster.

Even more famous has it become in the present century through the dramatic discovery by Sir Arthur Evans of the vast palace and the "lost civilization" it represents. Living to the age of ninety and publishing the results of his excavations in *The Palace of Minos at Knossos*—six comprehensive, lavishly illustrated tomes—Evans, by his energy, imagination and showmanship, has become almost as much a part of the legend of the place as King Minos himself.

Knossos is easy to reach. A journey of an hour and a half by plane or overnight by boat from Athens will bring the visitor to Herakleion, and from there it is but a few minutes by car to the site. Moreover, nearly all the treasures of Minoan art are housed in the museum at Herakleion, which is now, thanks to its energetic director, Dr. Nicholas Platon, one of the most modern and best arranged museums in Europe.

And so it is that many visitors think that when they have seen Knossos they have seen Crete. Yet the city of Knossos contained only one of the "big three" Bronze Age palaces of Crete, not to mention several smaller ones, as well as numerous very substantial private houses in various parts of the island. The great palaces at Knossos, Phaistos and Mallia maintained an apparently friendly and peaceful "co-existence" throughout the culminating period of the "Minoan" civilization, as we call it, from about 2000 to 1400 B.C. However, as a result of the recent decipherment of the Linear B type of clay tablets found in the royal archives at Knossos, and on the mainland at Mycenae and Pylos (see *ARCHAEOLOGY* 9 [1956] 273-279), it now appears that the mainland, Mycenaean, Greeks occupied Knossos during the last half century or so of this period, and from it probably dominated the rest of the island. The Minoan Cretans were, by the way, *not* Greeks in race or language, whatever else they may have been.

The rather smaller palace of Mallia—its ancient name

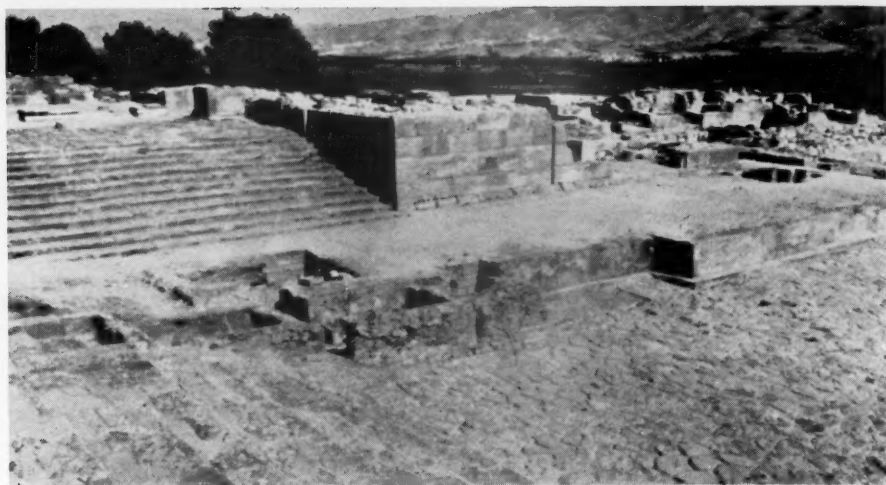
is uncertain—is pleasantly situated a few minutes' walk from a fine sand beach some twenty miles east of Knossos along the north coast. The ground-plan of this palace is preserved almost complete—much more so than that of Knossos. Phaistos suffers from the handicap of being less accessible, and the visitor is likely to be deterred from making the extra effort by hearing from someone that its palace is "really very like the Knossos palace, but not so well preserved."

That it is not so much *restored*, at any rate, there is no doubt. And the restorations at Knossos do help the tourist to understand what he sees. Yet, without being the labyrinth that Knossos literally is, Phaistos can provide plenty to occupy the sightseer. If he should desire more he has only to go on a little farther, preferably on foot, to the charming and picturesquely situated "summer palace" at the place now called Hagia Triada, or Holy Trinity—so named from a small adjacent chapel.

When I visited Phaistos in the summer of 1955, after leaving the bus which had brought me from Herakleion by a winding mountain road across the width of the island in some three hours, I took a wrong turn and presently found myself several hundred feet higher than the palace, upon the summit of a long ridge on whose eastern extremity the ruins of the building could be seen in a grove of pines. Despite the weight of my pack and camera equipment I did not regret the extra climb, for stretching away till it was lost in the distant haze to the east was the greatest agricultural region in Crete, the plain of the Mesará. One source of the prosperity of the ancient kings of Phaistos became clear at a glance.

The southern shores of Crete, facing Africa, are not far away, but they were completely concealed from my view by a coastal range of hills. To the north the plain is sheltered from the winter winds by a great range of mountains which forms the backbone of the island and culminates in Mt. Ida, legendary birthplace of Zeus, the sky-god, which rises to a height of more than eight thousand feet.

A steep descent, followed by a more gradual slope, soon brought me to the principal façade of the palace. Even in its ruins it is extraordinarily impressive. A flight of steps forty-five feet in width (67) forms the grand approach to the palace. [N.B. This and following numbers in the text refer to numbers on the palace plan.] It



The grand entranceway of the palace at Phaistos, in southern Crete, as it appears when viewed from so-called theatral area.

is built with all the Minoan know-how in stair construction: broad treads, low risers, and each step slanted so as to shed the rain-water and ease the ascent.

At the head of the Grand Staircase are the remains of a magnificent entrance: first a wide opening with a massive central column (68) probably of the characteristic Cretan type, tapering toward the bottom; then two large doorways; and finally three columns (69) fronting a light-shaft (69a). At the left a door leads to a stairway (71) which in two broad flights formed, I believe, the approach to the rooms of state we shall describe below. Perhaps no more grandly conceived entrance was ever built before the Propylaea of the Athenian Acropolis!

To the right of the Grand Staircase is a massive wall of finely dressed masonry enclosing a rectangular block of rooms which on the ground floor once provided capacious storage facilities for the wine and olive harvests of the Mesará (27-38). Now the Italian excavators in their recent publication of this palace (L. Pernier, *Il Palazzo Minoico di Festòs I, Gli strati più antichi e il primo palazzo* [1935]; Pernier and Banti, *ibid. II, Il secondo palazzo* [1951]) expressed the opinion, based on associated finds, that in spite of the architectural quality of this block and in spite of its dominating position, which in the other palaces was surely the location of the principal state apartments (Evans' "Piano Nobile"), the upper rooms here served only for the storage of grain! A detailed study of the floor levels and stairway locations has convinced me that the excavators' view was due to a failure to realize that above the storage rooms was not one but two stories: the first perhaps used for grain

storage, but the second containing a grand suite of rooms for the reception of important visitors or foreign representatives—or perhaps for gay court balls where danced trim-waisted youths and sophisticated beauties wearing brightly colored flounced skirts and low-cut boleros.

The general appearance is suggested in my restored drawing of the Grand Propylon and the block of the State Apartments: shallow recesses, symmetrically placed on the projecting façade, relieve the severity of the palace walls, and the upper stories were well lighted by windows set within the recesses. In monumental effect this imposing architectural unit quite outdoes anything we know at Knossos. A detailed study has appeared in the *American Journal of Archaeology* 60 [1956] 151-157.

Another stairway (39), reached from a door at the rear of the light-shaft, descends to the central court (40). Nearly one hundred and seventy feet long by seventy-five feet wide, it is almost identical in size with the court at Knossos and, like it, forms the nucleus of the whole palace. Since it is much better preserved than the Knossos court we can see that both its long sides were fronted by continuous porticoes which probably, at least in part, had galleries above. A pleasing variety of effect was attained along the east portico by alternating the columns with square piers—a typical Minoan scheme.

The most impressive part of the central court at Phaistos was its northern end. Strict symmetry and axial arrangement do not seem normally to have appealed to Cretan taste, which favored variety and contrast. Here, nevertheless, we find that a large doorway (from which an important corridor runs north to a smaller court and



Suggested restoration of the grand entranceway of the Phaistos palace; the top floor on the right contained the state apartments.

## PHAISTOS *continued*



The domestic quarter at Phaistos from the northeast. Modern roofing protects remains of the queen's apartments at right.



The central court of Phaistos from the south; Mt. Ida, legendary birthplace of Zeus, lies on the main axis of the court.

so to a north entrance of the palace) has been placed exactly on the central axis of the court. Today, with nothing to block our view, we can see that this axis is directly in line with the sacred grotto of Kamáres near the summit of Ida several miles to the north.

At equal intervals on either side of this central doorway are the stone bases for a pair of half-columns; beyond these again are two deep niches, each with a painted decoration consisting of interlaced zigzags outlining the four sides and diagonals of a rectangle, and lastly two recesses similar to those on the west front of the palace. The restoration of the three-storied façade which I here venture to offer (page 213) will suggest an effect unmatched elsewhere in Cretan architecture. If we are right in restoring the smaller half-columns in the third story, this doorway may have been the ultimate inspiration of such handsome façades as that of the great royal tomb at Mycenae commonly known as the Treasury of Atreus.

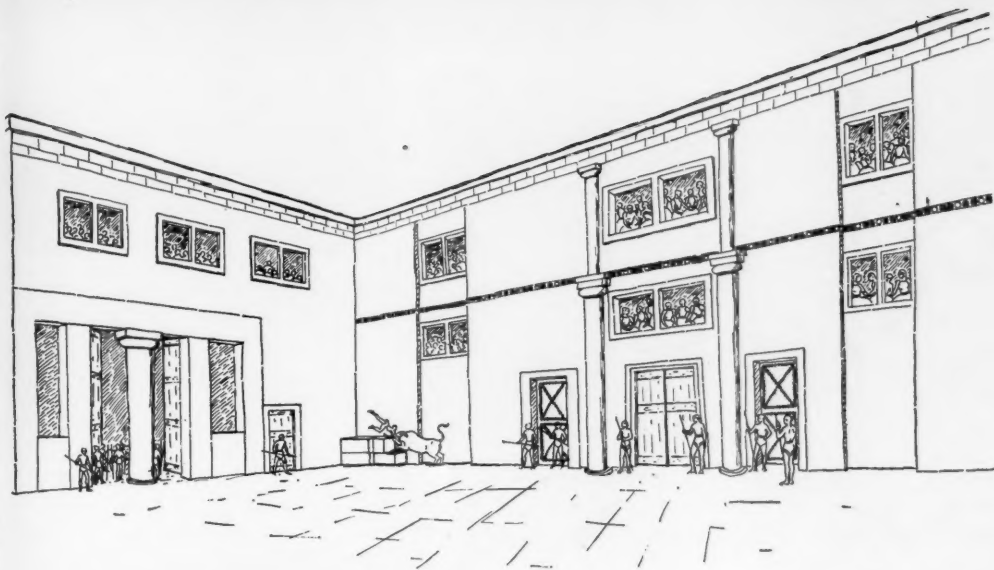
Our restoration also shows a crowd of Minoan Cretans eagerly watching the bull-games, which were the most popular diversion of the time. Unlike the gladiatorial exhibitions of Rome or the bull-fights of present-day Spain, these were displays of acrobatic skill well suited to the refined and sophisticated Minoans. In spite of the fact that they are pictured over and over in Cretan art, especially on their seal-stones and their wall-paintings, it has nevertheless remained uncertain where these performances were put on. Evans and others have been unwilling to believe that the central courts of the palaces, although in many ways excellently suited for the purpose, could have been the scene of these sports, since they

could find at Knossos no means of protection for the surrounding porticoes and rooms from an animal that might attempt to escape the arena. But had they examined Phaistos and particularly Mallia more attentively they might have discovered a system of protective devices very difficult to explain in any other way. Here at Phaistos, in the northwest corner of the court, is a particularly interesting piece of equipment: a stepped stone platform from which the acrobat might leap on or over the bull, as we see him doing in the restoration. Of course the bull-games were probably much more than mere secular sports, at least in origin. Perhaps that is why the axis of the Phaistos central court is, as we have noticed, pointed toward the Kamáres cave, one of the most venerable sanctuaries of the Minoan religion.

Let us visit one other part of the palace. Retracing our way up the steps (39) from the central court, we continue north along a broad corridor into a smaller square court with porticoes on all four sides, forming a complete peristyle (74). A peristyle such as this is unknown in the Knossos palace.

From the northeast corner of this court a flight of steps descends to a series of connecting rooms (50-51, 77-86) which forms a distinct group closed off from the rest of the palace. Situated on a partly artificial terrace at the edge of the hill, these rooms are the finest which are preserved at Phaistos. Their floors are beautifully laid in large regular slabs of gypsum with red stucco filling the joints, and thin slabs of gypsum veneer conceal the structure of the walls. Phaistos was fortunate in having nearby the finest gypsum quarries on the island, and the hand-





Restoration of north end of the central court of Phaistos; spectators at the windows are watching the bull-games.

## PHAISTOS *continued*

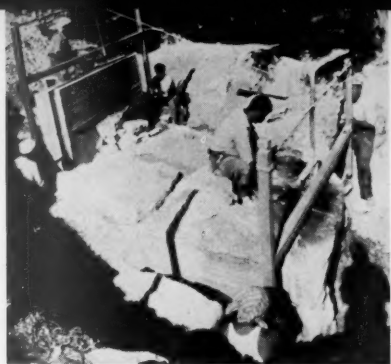


The handsome gypsum floor in one of the rooms of the domestic quarter, as now restored. Each of the slabs was originally outlined with red stucco.





Bathroom (foreground) and main room of the queen's apartments, with restored gypsum floor and gypsum veneer on walls.



Sawing gypsum for the restoration work in the palaces at Hagia Triada and Phaistos.

View from domestic quarters of Phaistos palace toward Mt. Ida.



## PHAISTOS *continued*

somely grained material was lavishly used in the palace.

Typically Cretan light-shafts or light-wells furnished light and air to interior rooms such as these. Also typical are the "pier-and-door partitions," rows of piers with double doors in each opening which could be closed for greater privacy or for protection against the weather.

In the northwest corner of this group of rooms a narrow corridor leads to what is clearly an especially private suite of chambers (80-84). This suite has its own bathroom (83), sunk a few feet below the general level and handsomely lined with gypsum slabs.

Along the north side of these apartments, and close to the edge of the hill, runs a veranda whose roof was supported by three columns (85). It commands a superb panorama over the fertile valley toward the range of mountains to the north, and directly opposite rises the truncated conical mass of Mt. Ida itself.

We cannot fail to recognize in this suite of rooms, connected by a private stairway to similar rooms in the story above, the living quarters of the royal family of Phaistos.

Except that the apartments face north instead of east, and command a magnificent view, every feature we have just described is also to be found in the "Domestic Quarter," as Evans called it, in the palace at Knossos. The larger rooms would correspond with the "Hall of the Double Axes," while the more private rooms with their bath would match his "Queen's Megaron."

The choice of a northern exposure causes no surprise to the visitor who comes here in the heat of a Cretan summer. Yet there was also provided, probably for winter use, a smaller but similar suite of private rooms (63-64) in the southeast corner of the palace. It is not likely to be merely chance that the living quarters in all the Cretan palaces, but above all at Phaistos, face the finest views available. Such a choice is entirely in keeping with the tastes of a people whose sensitive murals, painted on the walls of their palaces some thirty-five hundred years ago, show them to have been as keenly appreciative of the beauties of nature as we of the modern world are wont to consider ourselves.

# Manuel Panselinos: A REVIEW ARTICLE

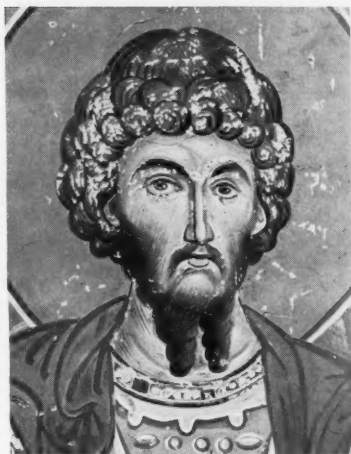
BY PAUL A. UNDERWOOD

*The Dumbarton Oaks Research Library and Collection*

THE EARLIEST and finest examples of Byzantine wall paintings still extant in the churches of Mount Athos are those of the Protaton, the Church of the Protos, or head, of the community of monasteries which together make up this unique monastic federation. The visitor who makes his way to the village of Kariyes, where the Protos and the other representatives of all twenty monasteries administer the internal and external affairs of the "republic," may be unimpressed by the simple exterior of the Protaton, but on entering he is rewarded when he beholds the works of Manuel Panselinos, who was one of the most accomplished painters of his day.

Little reliable information exists concerning the career of Panselinos, and what is recorded appears in documents not earlier than the seventeenth century. From these sources it is not possible to date his period of activity, and all that emerges is that he went to the Holy Mountain from Thessalonika and that he executed the paintings of the Protaton. In the extensive amount of speculation concerning this artist, he has been assigned to every century between the eleventh and the sixteenth. In view of numerous examples of thirteenth and fourteenth century Byzantine wall painting that have been brought to light in recent decades, especially in Macedonia, Serbia and Constantinople, there can be no doubt that the Protaton paintings are Palaeologan in style and should probably be dated in the early years of the fourteenth century.

Not all the paintings in the Protaton are the works of Panselinos, for some of the less important parts are decorated with paintings that are dated by inscriptions of the sixteenth century, thereby causing some scholars to date



all the paintings, and the life of Panselinos, too late. It is fortunate that most of the paintings of the Protaton did not share the fate of those in certain other churches of Mount Athos, which were completely repainted in later centuries, especially in the eighteenth and nineteenth. Until three years ago, however, the Protaton paintings were in poor condition and badly in need of cleaning and repairs. It is appropriate, therefore, that their cleaning, executed by Mr. Photis Zachariou for the Department of Restoration of the Greek Ministry of National Education, should be

marked by the publication of some of the newly restored paintings,\* one of which is reproduced on the cover of this issue. It is to be regretted, however, that the publishers made their reproductions from Mr. Zachariou's copies of a small number of heads rather than from the original paintings in a more varied selection which would have conveyed the quality of the art of Panselinos to better effect. The subject of the painting reproduced here is St. Theodore Stratilates, wrongly identified in the Athens volume as St. Theodore Tyro.

Despite the illustrative inadequacy of this publication, it contains a clear and concise statement by Professor Andrew Xyngopoulos of many of the salient characteristics of Panselinos' art. Among these, he finds that Panselinos avoided the practice, common to many contemporary and later painters, of treating the subjects as individually framed scenes, like so many pictures hung

\*MANUEL PANSELINOS. Text by ANDREW XYNGOPOULOS. Copies, drawings and ornamental designs by PHOTIS ZACHARIOU. 28 pages, text figures, 13 plates. Athens' Editions, Athens 1956 \$10.00

upon the wall, which he finds characteristic of the so-called Cretan School. Panselinos tends rather to blend succeeding scenes into continuous units, reducing the framing of scenes within a zone as much as the architecture will permit. The Protaton painter inclined to severe but "idealized" realism, and was extremely able in his portrayal of the individual—he differentiated the characters of individual saints or personages rather than rendering them as stereotypes. Yet when dealing with the great standard themes, established as sacrosanct images, the painter remained conservative in iconography and style. This did not, however, prevent him from inserting genre-like motifs as incidentals to relieve the austerity of the ancient iconographic order. Painted architecture played an important role. It was used to accentuate important figures or groupings of figures in the compositions, and in places it was composed with strict symmetry as a means of isolating Christ, as chief protagonist, from his disciples in scenes where this is appropriate (Last Supper, Incredulity of Thomas). The painter also incorporated reminiscences of ancient Hellenistic models, a characteristic which is conspicuous in the art of the Palaeologan epoch.

The position is taken, however, that these qualities would place the artist in the "Macedonian" School, with Mr. Xyngopoulos' native Salonika as the creative center. To this school he has in recent years assigned several of the finest works found in Yugoslav and Greek Macedonia and surrounding areas, as well as many iconographic innovations that made their appearance in these regions. Among the monuments that Xyngopoulos considers to be "Macedonian" are the mosaics and frescoes in the church

of the Holy Apostles in Salonika. Here the mosaics are fragmentary and the frescoes have suffered much damage and are not yet published. If these are examples of the work of a "Macedonian" school, then the mosaics and frescoes of the Kariye Djami in Constantinople, and most of what is known of Constantinopolitan art of the Palaeologan period, would have to be considered "Macedonian." The Kariye Djami and Holy Apostles mosaics and frescoes, executed within a very few years of one another, have the most extraordinary identity of style that can be found in Palaeologan art.

While the paintings of the Protaton are clearly the product of an atelier quite distinct from that which worked in the Holy Apostles and the Kariye Djami, yet all three monuments display all the characteristics described as those of the Protaton. What chiefly distinguishes the style of the Protaton (and a few other monuments, such as Milutin's church at Studenica) from the Kariye Djami (and the Holy Apostles) is not these general stylistic qualities, many of which are common to all the best works of the Palaeologan epoch, but rather the figure style which includes such matters as proportions, drapery treatment, postures, and the quality of movement in the figures. These are not discussed in the publication on Panselinos, nor is it possible to judge them on the basis of the illustrations it presents. The question of "schools" and their localization is, in fact, prematurely raised, for the fact is that, aside from the mosaics in the Holy Apostles which Mr. Xyngopoulos has so ably published, the key monuments, including the Protaton, have not yet been made available for detailed study by adequate publication.

*Highlights of  
the Winter issue of*

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# ARCHAEOLOGICAL NEWS

## The Royal Tomb at Gordion

One of the most exciting excavations in recent years is that going on at ancient Gordion, seventy miles southwest of Ankara, Turkey. Our last report on the work there told of the discovery of a young prince's tomb (ARCHAEOLOGY 9 [1956] 263-267). This year the University of Pennsylvania expedition tackled the biggest job of all—the excavation of the largest burial mound among the many which dot the plain. Dr. Rodney S. Young, director of the expedition, tells us of the discovery:

On June 28th the tomb under the biggest burial mound at Gordion was opened. This mound has always been a challenge to the excavator on technical grounds as well as because of the promise that a tumulus of such size—about 164 feet in height and more than 656 in diameter—would cover the burial of an important personage. Looking for the grave by conventional methods, however, seemed inevitably to entail the destruction of the tumulus itself, as well as to resemble the proverbial search for a needle in a haystack. A means was devised to find the position of the burial within the mound, by boring from above with a light oil-drilling rig. This could locate and define the limits of the pile of stones usually laid over a burial of the type and period assumed to lie under the tumulus, and at the same time would not go through the stone to destroy anything in the tomb. By this process a pile of stone almost one hundred feet in diameter was located and defined, just to the south and west of the peak, and at an average depth of 128 feet.

The stone pile once located, the problem arose as to how to dig the grave. It was calculated that conventional trenching from the top would require the removal of more than 85,000 cubic yards of earth as well as the destruction of the tumulus itself, and this seemed to be out of the question. The area of the stone pile also seemed too great for the sinking of a vertical

shaft with reinforced sides. The third possible method—that of tunneling—seemed the most economical as well as the least destructive; and this was the solution adopted.

The tunnel was aimed at a point just to the southwest of center, near the middle of the stone pile. An open cut was made, about six feet wide and 223 feet long, from the edge of the mound to a face from which the tunnel could be started. The outer half of this cut, to a distance of 115 feet, was entirely through earth washed down from the mound itself and deposited around its base in the course of nearly 2700 years. At 115 feet from the end of the cut began the tumulus itself, the stratification quite clear and all of hard clay. One must imagine, therefore, an original mound considerably higher and steeper, and markedly less in girth than the present one.

For the tunneling a crew of experienced miners was imported from the Zonguldak coal-mining district, together with a foreman and a carpenter. As the tunnel was entirely through hard clay, a minimum of shoring was necessary. The crew worked around the clock in three shifts, and in a little more than three weeks encountered a wall built of soft stone (*poros*) blocks at a distance of about 230 feet from the entrance to the tunnel. Investiga-

tion showed that it would be impractical to try to change the level and continue the tunnel over the top of the wall; and also it seemed evident that the burial lay at a level lower than that of our tunnel. Accordingly, a breach was made in the wall. The immediate result of this was a tremendous outrush of loose stone rubble; the stone wall evidently divided the clay of the tumulus from the rubble over or around the tomb. For ten days continuously rubble was taken out. As the level of the loose stone became lower the wooden wall of the tomb itself began to appear: a wall of huge logs piled one on top of another to a height of nearly ten feet, evidently with a sloping roof above. Not enough could be seen to tell whether or not this roof was broken. Above the tomb at a height of about thirteen feet stood a dome of clay showing the original contour of the stone pile. Over this pile the clay had been laid and it had hardened sufficiently in the course of two and a half millennia to hold up by itself. Since the whole space beneath this clay dome had been full of rubble before the stone wall was breached, it seemed impossible that the tomb roof could have broken, since in that case the stone would have rushed in to fill the tomb, leaving an empty space under the center of the dome.



The big tumulus at Gordion as it appeared during drilling operations.





Top: Bronze cauldrons on iron tripods, bronze vases lying on the floor. Center: Inlaid wooden furniture at left, bronze bowls and pieces of furniture scattered on the floor. Bottom: Two bronze pitchers; between them bronze plaques with studded decoration, purpose unknown.

Enough rubble was drawn off to clear the face of the wooden tomb wall; then dams were put in at either side and the tunnel brought right up to the face of the wall. In three places holes were bored through the wall with a large auger; in each case rubble was found on the other side. We were still unwilling to believe that the roof was broken, but a small window cut through the wall only revealed more rubble on the other side. An afternoon was spent taking it out through the small opening until finally enough had run down to reveal the face of a second inner wall of large squared timbers, nicely finished and closely fitted—the wall of a second chamber within the first. Again the auger was sent for, and this time it went through without encountering rubble. The tomb was intact!

A small window cut through the inner wall quickly confirmed this. It became a favorite occupation of the staff to peer in through the narrow opening with a flashlight, and all sorts of things were seen or imagined, from a chariot to a stuffed alligator.

Doorways cut through the two wooden walls finally gave access to the tomb on June 28th. The chamber, made of large, beautifully finished timbers, is over 20 feet long and some 17 feet wide. It is covered by a gable roof; its height at the sides is 10½ feet, to the peak of the gable at either end almost 13 feet. The roof is supported at mid-point by heavy cross-beams which pass across the chamber, through the inner walls, and are mortised at their ends to the top of the outer wall of logs. The whole is in excellent condition except that the cross-beams have cracked.

The orientation of the tomb was north-south. At the northwest corner and along the north wall was a large bed with a coverlet of many layers of linen and woolen cloth. On this lay the skeleton, head toward the east, of a man over sixty years old and of short stature—about 5 feet 3 inches. Professor Müzaffer Şenyürek of Ankara University has verified these details. The



center of the room was occupied by five wooden tables, all collapsed, which had carried about eighty bronze bowls, each with a raised boss, or *omphalos*, in the center. More vessels of bronze—ring-handled bowls, spouted jars and basins, large and small trefoil-mouthed jugs, and two ladles—lay on the floor near the walls. Iron nails in these walls had probably once served to hang these vessels from. Against the south wall three huge bronze cauldrons stood on iron ring stands. Of these one has two handles representing bulls' heads looking outward—the Urartu type; a second has four handles showing winged sirens looking in, and the third has two sirens with female heads and two with square-bearded heads of Assyrian type. Against the walls had stood three more tables loaded with bronze vessels. Leaning against the east wall were two large wooden screens with elaborate patterns of inlay; on the floor behind them were two bronze stulæ, one in the shape of a lion's head, the other a ram's head, both with inlaid eyes. A ninth table which had stood nearby was of fantastic construction with openwork frame and panels decorated with inlay, finials to support the top, and struts from the curved legs to support the frame. Finally, on the floor beyond the head of the bed lay a cloth bag containing a gross of bronze fibulæ, most of them in perfect condition.

The contents of the tomb resemble those from Tumulus P and Koerte's Tumulus III, but are perhaps slightly earlier. The size of the tumulus and the elaborateness of the tomb itself, as well as the richness of its contents, suggest that it must be the grave of a king. The last king of Phrygia, the historical Midas, was overthrown by the Kimmerians at the beginning of the seventh century B.C. This tomb must be that of his predecessor or more prosperous times—perhaps a Gordios who ruled during the second half of the eighth century.

#### Fellowships to Egypt

The American Research Center in Egypt announces the award of two fellowships for study in Egypt during 1957-1958. The first, for Egyptological studies, has been granted to Edward F. Wenthe of the University of Chicago, the second, for Islamic studies, to John A. Williams of Princeton University.

These fellowships, made possible

through a grant from the Bollingen Foundation, are the first of a series to be awarded annually for three years. In addition to pursuing their studies, Mr. Wenthe will act as director and Mr. Williams as co-director of the American Research Center, which maintains an office in Cairo to furnish aid and information to American institutions, scholars and students and establish liaison with Egyptian scholars.

The American Research Center, a non-profit organization affiliated with the ARCHAEOLOGICAL INSTITUTE OF AMERICA, was founded in 1948. Since that time it has maintained a director in Cairo during every season except 1956-1957, when political conditions made it seem inadvisable. During 1957, however, Mr. Wenthe acted informally as representative of the Center, furnishing information to American institutions and scholars and providing archaeological news for the *Newsletter* circulated to the membership of the Center. Those interested in becoming members of the Center should write to Mrs. Elizabeth Riefstahl, Executive Secretary, South Essex, Massachusetts.

#### SAA Meeting at Madison

The 22nd Annual Meeting of the Society for American Archaeology was held in conjunction with the 33rd Annual Meeting of the Central States Anthropological Society at the University of Wisconsin, Madison, Wisconsin, May 2-4, 1957. Six of the fourteen sessions were devoted to archaeology.

Thursday afternoon one session opened with a report on "Site 52 in the Mesa Verde," by Ralph A. Luebber, Laurance Herold and Arthur Rohn. This site, dating about A.D. 1120, has an unusual location at the bottom of a draw. Among other unusual features are the step-like architecture and the use of alignments. No kiva is present. Douglas Schwartz read an important paper on "Population and Habitation Changes in the Southern Grand Canyon Region," the southwest corner of the Coconino Plateau, and Cataract Canyon, the present home of the Hava-supai Indians. The population in various periods was estimated from the number of occupied sites. This showed a small population from A.D. 600 to 900, with a great increase, probably due to pressure from outside, until the peak at 1200, then a decrease until

1300. Earlier habitations were on the valley floor; after 1300 the people moved up to the canyon cliffs. Fluctuation in rainfall was probably the major cause of population changes.

"The Paleo-Indian in the Northeast" was William A. Ritchie's topic. He dates this period as 7000-5500 B.P. and believes that fluted points are later in the east than in the far west (a point disputed by others in the discussion that followed). Douglas S. Byers spoke on "A Re-examination of the Sequence at Ellsworth Falls, Maine." Four occupation levels from Paleo-Indian to Historic can be distinguished in the four-foot deposit. Alex D. Krieger discussed "Definitions of Pleistocene, Early Man, Recent, Archaic, etc." arguing for a better standardization of terms to agree with glacial and geological phenomena, time and cultural conditions. He prefers the term "Proto-Archaic" to "Early Archaic" and considers "use-grinding" tools to be characteristic of this period (ca. 10,000 B.P.), polished tools of the Archaic period (ca. 6000 B.P.). A report on "The Modoc Rock Shelter" was presented by Melvin L. Fowler. The depth of the deposit here is twenty-two feet, the deeper material similar to eastern Archaic, ca. 6000 B.P.

In the Thursday evening session on "The Use of Motion Pictures in Anthropological Research and Training," Glenn A. Black spoke of the pictures he had made to teach Indian prehistory and history.

At the other Thursday evening session Carl B. Compton spoke on "The Distribution of Certain Precolumbian Forms and Motifs." He indicated the wide distribution of 1) open-mouth bird effigy vessels from north central Mexico and Arizona; 2) small cruciform stones from northern Mexico, Arizona and the Mississippi Valley; 3) long-nosed god figures from Mexico, the Mississippi Valley, Melanesia, and other parts of the world. J. Eric S. Thompson presented a paper on "Divinatory Almanacs and Hieroglyphs for Diseases in the Maya Codices: A New Discovery," in which he explained his identification of a new Maya glyph for divine punishment, sickness and death. Research by Southern Illinois University in the state of Durango, Mexico, was described by J. Charles Kelley, mainly the excavations at the Schroeder site near the city of Durango. This is apparently the north-

ernmost known site that shows such Mesoamerican traits as a masonry pyramid, as well as many typically Mexican small objects. Other traits show resemblances to U.S. southwestern states.

Donald W. Lathrap opened one of the sessions on Friday morning with a talk on "The Cultural Sequence at Yarinacocha in Eastern Peru." Four ceramic complexes were found here. The uppermost is the modern Shipibo, which developed elsewhere. Resemblances to pottery from the Orinoco and from Marajó Island are noticeable in lower levels, and also evidences of a widespread early Archaic horizon with resemblances to Tlatilco in Mexico, Usulután in Guatemala, and Movil in Colombia. "Pottery Molding and Stamping on the North Coast of Peru: The Relative Persistence of Two Technical Traditions" was the subject of Donald Collier's paper. Both techniques were characteristic of northern coastal Peru from early to late horizons. Gertrude E. Dole spoke on "Outlines of the Prehistory of the Upper Xingú Basin," illustrating her deductions with pottery vessels.

The important results of "The 1956 Excavations in the Lagoa Santa Region, Brazil" were described by Wesley R. Hurt. Over six hundred caves were examined and eight excavated. The great antiquity which was claimed for the skeletal remains by earlier excavators is not defensible; there is no proof of the contemporaneity of the remains of man and those of extinct animals. The occupation period may not antedate 3000 B.C. Robert Carneiro spoke on "Tropical Forest Culture History: An Attempted Reconstruction." There are a few universal traits throughout the region and the very oldest basic ones still survive. Some new traits were added in the pre-Neolithic period, and many more in the Neolithic. In the Amazon basin maize seems to have preceded manioc. The Nuclear Amazon region, the Amazon basin, was probably the source of the Tropical Forest Culture.

The second session on Friday morning opened with "An Informal Discussion of Problems Related to Oneota." This was a late archaeological complex of widespread distribution in the upper Mississippi and lower Missouri valleys. Eight speakers discussed the problems from the points of view of various states. It seems to have been a prairie culture that was carried to the western

plains by the protohistoric tribes. Stephen Williams spoke on "Scarifiers in the Southeast: An Archaeological Identification." These instruments, used to produce scarifications on the human body, are known from the Cherokee and Creek. They seem to be of pan-Southeastern distribution. "Radiometric Assay of Archaeological Materials" was discussed by Fred P. Thieme. E. Mott Davis reported on "Brown VIII, A Burial Site on the Eastern Gulf Coast of Texas." It differs from the Lower Mississippi and Caddo areas.

"Salvage Archaeology at McGee Bend Reservoir, Texas" was reported on by Edward P. Jelks. Two sites were excavated. A mound which produced large blades and a copper gorget is probably of Caddoan culture, Alto Focus, about six hundred years old. The second site was of circular house pattern and contained six burials. The session closed with a paper by Theodore L. Stoddard on "An Application of the Robinson-Brainerd Method of Chronological Ordering to the Archaeology of Maine." An analysis was made of twenty-eight shell heaps on the Maine coast, mainly flaked material with little pottery. Their percentages were compared according to the above technique, with the conclusion that the sensitivity of the technique is only as good as the technology; however, it can introduce new insight into data.

The session on Friday afternoon opened with "Western American Prehistory—An Hypothesis," by Douglas Osborne. He believes that the Washington-Oregon coastal culture is the result of a transition from plateau to coastal economy by groups descending the rivers in the altithermal period. Increasing dependence on shellfish and fish changed the orientation from land to sea. Richard D. Daugherty spoke on "An Archaeological Survey of the Upper Peace River, British Columbia." Though this pass through the Rockies was probably an early migration route he was unable to discover any Paleo-Indian sites. T. P. Bank II related the "Cultural Succession in the Aleutians II." Both Harvard and Michigan have had expeditions there recently. Investigators disagree as to whether there are two or three main cultural periods; he agrees in general with Jochelson and Quimby. The age may be 3000 years.

"The Knight Island Blanket: Analysis and Significance" was discussed by Carolyn M. Osborne. This was a burial

blanket, probably dating from about 1800, found in 1949 in Yakutat Bay, Alaska. It is not of recent Chilkat shape and has more colors, in twilled twine weave. A. R. Kelly and D. W. Chase presented a paper on "Holloca Creek, A Stratified Early Woodland Site in West Georgia." There are at least six successive occupation levels from Late Archaic to Mississippian. The Chattahoochee period ties up with Florida northwest coast. John M. Goggin spoke on "The Archaeological Study of Spanish Colonial Artifacts." Few of these are found on Indian sites, more in colonial settlements. Spanish paintings, invoices and historical documents are also important sources. The session closed with "Seminars in Archaeology—1955: An Evaluation" by Arden R. King.

W. H. Sears opened Saturday morning's session with an important paper on "Burial Mounds on the Gulf Coastal Plain." There are four types of burials, important to distinguish because of social implications. The oldest are the continuous-use mounds with scattered burials, next the mass and charnel-house (ossuary) burials of the Choctaw type. The pit type is the latest, the pottery-deposit type earlier. "Culture Sequence in the Yazoo Basin, Mississippi" was discussed by Robert E. Greengo. There were many cultural periods, from Poverty Point at 1000-500 B.C. to Tunica at A.D. 1700.

"The Hopewell Complex in Iowa" was discussed by Reynold J. Ruppé. Large Hopewell sites are found along the west bank of the Mississippi. Throughout the state are found small Middle Woodland mounds that show a few Hopewellian traits. "A Hopewell Village Near Hull, Illinois" was described by John C. McGregor. Many Hopewellian traits are missing there, however; the culture might be Early Hopewell. Raymond S. Baby described the "Excavation of a Hopewellian Mound near Frankfort, Ohio." Cremations and inhumations were found.

Edward V. McMichael spoke on "The Newtown Focus of Southwestern Ohio." This new focus consists of the Newtown site and the Turpin site on the Miami River. "A Cincinnati, Ohio, Adena Mound: Interim Report" was described by James H. Kellar. This is a big mound, still only partially excavated, within the city limits. The log tombs, though collapsed, are in excellent condition. Many Hopewellian arti-

facts were found, and a number of extended single burials. William S. Laughlin closed the program with a talk on "Practical and Methodological Problems on the Racial History of the American Indian," in which he showed how traits of physical anthropology can be used to show ethnic and cultural migrations. The Eskimo and the Norse in Greenland provided his data.

CAROL K. RACHLIN  
J. ALDEN MASON

### Norton Lecturer

Each year the Charles Eliot Norton Lectureship, established in honor of the distinguished founder of the ARCHAEOLOGICAL INSTITUTE OF AMERICA, is awarded to a prominent scholar, who lectures to as many of the local Societies as is feasible. Two years out of three the appointee is brought from abroad; the third year an American archaeologist is chosen.

Professor Frank E. Brown has been appointed Norton Lecturer for 1957-58. Professor Brown's experience includes excavation at such widely separated sites as Dura in Syria and Cosa in central Italy. During the war (1943-45) he was with the Office of War Information in Damascus. From 1945 to 1947 he was Director of Antiquities for the Republic of Syria; for five years (1947-52) he directed the Classical School of the American Academy at Rome. At present he is Thacher Professor of Latin at Yale.

### AIA Affiliates With AAAS

The following announcement, from the American Association for the Advancement of Science, will be of interest to our members:

The ARCHAEOLOGICAL INSTITUTE OF AMERICA, which became an associated society of the American Association for the Advancement of Science in 1925, has had its status changed to an affiliated society as of January 1, 1957. This means that the Institute will have representation on the AAAS Council and will take part in the government of the AAAS.

As an affiliate, the AIA is welcome to meet with the AAAS, with its national meeting as well as with special or regional meetings; or it may act as co-sponsor of an appropriate program.

The Institute is included under AAAS Section H-Anthropology, and is annually listed in such publications

as the General Program-Directory of the AAAS annual meeting and in a leaflet sent to prospective members.

Those not already members of the AAAS are invited to join. Members of the Association not only enjoy the benefit of participating in the one organization that represents all branches of science and scientific interest, but also have the privilege of obtaining AAAS Symposium Volumes and either or both of the Association journals, *Science* and *The Scientific Monthly*, at reduced rates. Those interested in joining the AAAS should write Dr. R. L. Taylor, AAAS, 1515 Massachusetts Avenue, N. W., Washington, D. C.

### Annual Meeting of the ARCHAEOLOGICAL INSTITUTE OF AMERICA

The fifty-ninth General Meeting of the ARCHAEOLOGICAL INSTITUTE OF AMERICA will be held jointly with the Annual Meeting of the American Philological Association at the Statler Hotel, Washington, D. C., December 28-30, 1957.

Those who wish to read papers should submit titles and abstracts, not later than October 15, 1957, to the General Secretary, ARCHAEOLOGICAL INSTITUTE OF AMERICA, 608 University of Cincinnati Library, Cincinnati 21, Ohio.

Requests for room reservations should be sent directly to the Statler.

### AAUW Grants for Research

The fellowship awards announced by the American Association of University Women for 1957-58 include four given for research in archaeology and related fields:

MARGARET A. ALEXANDER, formerly associate editor of *ARCHAEOLOGY*, will study the relationship of the Early Christian mosaics of North Africa to those of other Mediterranean countries.

RIVKAH HARRIS, The Oriental Institute, University of Chicago, will study the status and role of women in the Old Babylonian period (1800-1600 B.C.).

MARTHA C. HEATH, Yale University, will participate in excavations at Lerna, Greece and will study certain finds.

ELEANOR STRUPPA, Randolph-Macon Woman's College, will do research on the subject of choral work in the production of Greek drama.

### Tikal—1957 Season

The second expedition of the University of Pennsylvania Museum to the jungle-shrouded Maya ruins of Tikal reached the site early in January and remained until late May. The staff for the full season included Edwin Shook, field director, William Coe and Vivian Broman, archaeologists, James Hazard, engineer, Walwin Barr, photographer, and Antonio Ortiz, foreman. Others participated from time to time.

The location of Tikal—in the heart of the vast, lowland tropical forest of Peten, Guatemala—poses special problems for a large-scale archaeological project. The site is remote from shipping and supply centers and virtually inaccessible except by air. Most of the labor and staff, their food and equipment, must be flown in by plane a distance of almost two hundred miles. In addition to personnel and baggage, approximately 100,000 pounds of equipment and supplies reached Tikal by air during the first four months this year. Air transportation within the country was provided by the Guatemalan government, which has also built and maintained the Tikal airfield, furnished radio communications, and otherwise assisted the project.

Both the 1956 and 1957 seasons were occupied largely with the establishment of a base camp. Progress has been retarded by the lack of an adequate permanent water supply. The expedition survived on a minimum amount of water, utilizing stagnant rain water from a few shallow, natural depressions (*aguadas*) and water that had collected in artificial reservoirs built by the ancient Maya. These, abandoned for more than a millennium, are choked with vegetation and silt, and only three of the seven so far discovered at Tikal are capable of holding water. In 1956 two wells were dug by hand, one to a depth of fifty feet and the other to sixty feet, without finding water. This year heavy well-drilling machinery was shipped from the States to Puerto Barrios, Guatemala, and transported to Tikal by air, piece by piece. The first machine-dug well penetrated to 530 feet, the limit of the drill, and then another hole was sunk 502 feet without striking water. Further drilling had to be suspended for lack of water to maintain operations. A third attempt to find well water will be made during the rainy season. Should this fail, the only prac-



tical step seems to be to clean, deepen and improve the drainage into three of the Maya reservoirs to conserve rain water.

In spite of these difficulties important results have been achieved. Exploration of the central ruins and surroundings brought to light one carved altar and two plain and four sculptured stelae, bringing the total number of stelae known from the site to ninety-three (68 plain, 25 carved). Also discovered were six artificial reservoirs (only one had been reported previously); a ball-court, one large group of temple and palace structures and several minor groups, and an uncounted number of house mounds, *chultuns* (underground rooms) and stone quarries. We learned that the arbitrary limits of sixteen square kilometers (4x4 kilometers) that we propose to map in detail do not encompass the metropolitan area of Tikal. House structures and small civic and ceremonial buildings continue for some distance east and south of our assumed map boundaries.

A good start was made on the arduous task of mapping the site. Without cutting bush, visibility is often limited to a few feet. Nevertheless, one square



Tikal, Stela 25. This Early Classic monument was purposely broken in ancient times, and the upper part re-used.



Excavating a row of plain stelae and altars along the front or court side of Str. 78, the east pyramid of a twin pyramid complex at Tikal. Note that the flat top of the pyramid bears no trace of a masonry temple. Photographs by George Holton.

kilometer has been surveyed on a scale of 1:2000 with a contour interval of one meter. The site map when complete will be a major contribution to Maya archaeology. It will represent the only large Lowland Maya site extensively surveyed for some distance beyond the central area of the more impressive public buildings.

The first controlled excavations at Tikal began in late January in a newly discovered group of ruins south of the Temple of the Inscriptions. Here the upper half of an Early Classic stela was found to have been re-set at the base of a Late Classic pyramid and temple. Our unsuccessful search for the lower half of the stela disclosed a long series of building activity, three minor burials, a crypt vault containing fragments of human bone and two pottery vessels, and a cache re-deposited in ancient times beneath the stela fragment.

Nearby, another purposely broken and re-cut upper portion of an Early Classic stela was found. These two newly discovered examples of mutilation of monuments led us to re-examine all early stelae at the site. The majority of these clearly show that the monuments had been broken in ancient times and only fragments of the original sculpture re-erected at some later time in the life of the city. The vio-

lence thus indicated may have been responsible for the end of the Early Classic period and for the hiatus in the sequence of inscriptions at Tikal.

Other unusual features of the site are emerging with the continued exploration and extensive clearing of the dense undergrowth in the central area of ruins. A unique architectural complex, recognized the first season, is repeated five times in Tikal, evidently erected at intervals of one *katun*, or twenty Maya years. Each complex consists of a court with a stela and altar set in an enclosure on the north side facing a vaulted building on the south side, and identical pyramids opposite each other on the east and west sides. These pyramids are flat-topped and have a stairway on each of their four sides. On the court side of the east pyramid there is invariably a row of plain stelae and altars. Four of the five stelae and altars erected in the five enclosures are carved and bear dedicatory dates, 9.14, —, 9.16, 9.17 and 9.18.0.0.0. The plain fifth stela and altar may represent the missing date of 9.15.0.0.0. During the past season we cleared and mapped two of these twin pyramid complexes, the 9.14 and 9.17 ones, and in the latter began excavation of the nine plain stelae and their accompanying altars.

Most of the exposed graffiti in Tikal

were recorded. These interesting random drawings occur on the lime-plastered walls, floors, door jambs, and vault faces of temples and palaces.

Special attention was given the plain and carved wood lintels remaining in the five great temples. From exact measurements obtained, carved chips and fragments recovered in the floor debris, and the sculptured beams remaining *in situ*, it is certain that replicas of most of the beams removed from Tikal many years ago can be replaced in their original positions. [An article on these interesting remains will appear in a forthcoming issue of *ARCHAEOLOGY*.]

EDWIN M. SHOOK

### Oriental Society Meeting

The two hundred and sixty-seventh meeting of the American Oriental Society took place in Princeton, April 24-26, and was characterized by numerous papers of general interest and by the charming hospitality of Princeton University, the Theological Seminary and Firestone Library, to which the blossoming magnolia trees contributed their share.

The report from the American Schools of Oriental Research by H. G. May showed that the 1956 excavations at Dhiban in Jordan resulted in the recovery of substantial evidence of Iron Age strata. The report also summarized the results of excavations at ancient Gibeon and at Shechem.

The report of the Baghdad School on a survey in Iraq by Dr. Vaughn Crawford and Dr. Robert M. Adams, to discover the pattern of the ancient Mesopotamian irrigation system, was supplemented by Dr. Crawford's own report. Eighteen hundred tells, or mounds, were visited and mapped in an area of over one thousand square miles. Among the sixty-two papers read, a selection of those having archaeological significance is presented here. A number of papers were devoted to the clarification of ancient geography and trade routes on the basis of evidence discovered in recent years. Albrecht Goetze located precisely the town of Emar in North Syria, so far known only from cuneiform texts. Hildegard Lewy traced the geographical details of the military campaign of a viceroy of Mari in the eighteenth century B.C. G. W. Van Beek spoke about the incense economy of ancient South Arabia and the north coast of

Somaliland, where frankincense and myrrh were grown. There must have been flourishing trade between South Arabia and Alexandria on the one hand, and Indian ports on the other. G. E. Mendenhall reported on an archaeological reconnaissance of the Syrian Desert. A series of tells from Palmyra to the Euphrates River apparently indicates the existence of village life from the late Chalcolithic period into the Iron Age. This evidence with that from Mari seems to establish a Middle Bronze Age route.

Florence E. Day drew attention to J. Sauvaget's interpretation of a number of ruins in Wadi 'Araba and the Negeb. He believes that these are Umayyad houses, not Nabataean caravansaries as thought by Nelson Glueck. Briggs W. Buchanan discussed Syrian cylinder seals of the earlier second millennium. Your reporter presented an Old Babylonian bronze statuette of an emaciated mournful man, recently acquired by the Cincinnati Art Museum. Perhaps a priest or Job-like figure, it is datable in the nineteenth century B.C.

A symposium with the rarefied sociological title, "Images of Outside Cultures," consisted of several outstanding papers. D. H. Ingalls spoke on "The Indian Image of the Greeks" which seems to have been formed in several stages. The first stage was produced by the mercenaries of Darius I of Persia in 518 B.C. They conveyed to the Indians the image of strong, cruel, merciless men. In the second and first centuries B.C. the Bactrian kings of Greek lineage who were willing to accept Buddhism and Hinduism conveyed to the Indians the image of barbarians submitting to the greater wisdom of India. Finally, through the translation of Greek astronomical texts into Sanskrit, Indian scholars obtained the image of a highly competent and respected, though somewhat abstract, body of knowledge available from Greek scholars. To illustrate the points of contact between Greeks and Indians, Ingalls referred to a fragment of correspondence between the Indian king Amitraghāta and Antiochus I of Syria (281-260 B.C.) reported by Hegesander and quoted by Athenaeus (*Deipnosophistai* xiv. 652-653). The Indian king begged Antiochus to purchase for him grape-syrup, figs and a sophist. Antiochus wrote back: "Figs and grape-syrup we'll dispatch to you, but it is against the law to sell a sophist." In-

galls also pointed to the fact, not widely known among Classical archaeologists, that the Indian kings of the early Christian centuries had bodyguards of Greek women who had very likely been shipped from Alexandria. The brisk trade in Greek women through Alexandria had hitherto been given a different interpretation!

In contrast to the simplified, half-legendary image which the majority of Indians had formed of the Greeks, the Greek image of the Indians was rational, factual and well informed, the prototype of the image which an intelligent Westerner forms of foreign peoples today. This Greek attitude contrasted as much with the Indian as with that of the ancient Sumerians. According to S. N. Kramer, who spoke on the manner in which the Sumerians of Mesopotamia saw themselves and the people who surrounded them, they formed utopian ideas about the country of Meluhha, now identified with the east coast of Africa, about Dilmun, which is either Bahrein or, according to Kramer, India, and about Aratta, east of Lake Van. Yet, although they looked down on the nomadic western Semites, the Martu, the absence of a pronounced feeling of superiority over other peoples is a remarkable feature of the Sumerians in the late third millennium B.C. The Chinese, on the other hand, as E. H. Schafer demonstrated, although they were interested in the costumes, food and sexual habits of other peoples, never considered a non-Chinese as a real human being.

An exhibition in Princeton University's Firestone Library further illuminated the theme of the image of the outside culture by showing in prints and books Europe's discovery of China and China's response to Europe, 1511-1839.

The climax of the meeting was the presidential address by Julius Lewy on "Some Aspects of Commercial Life in Assyria and Asia Minor in the Nineteenth Pre-Christian Century." The complicated activities of the Assyrian traders in eastern Asia Minor were clarified to show a government-controlled pattern in which some goods could be freely traded and others could not. The most important of the latter were tin and bronze, the raw materials for superior weapons, which the Assyrian government tried to keep from reaching the local population of eastern Asia Minor for strategic reasons.





## REVIEWS OF RECENT BOOKS

**NEW DISCOVERIES AT JAMESTOWN, Site of the First Successful English Settlement in America**, by JOHN L. COTTER and J. PAUL HUDSON. 99 pages, many plates and figures. National Park Service, Washington 1957 \$0.50

Carefully written, fully illustrated and attractively produced, this account of work accomplished by a group of devoted archaeologists and their colleagues during the past twenty years fills a long-standing gap. Dealing with a key site of the Colonial period, it is an important addition to the slim list of reports of systematic investigations at historic sites of European origin in North America. Purposely popular in style, and brief (sometimes tantalizingly so!), it nevertheless covers its subject comprehensively, providing a bird's-eye view of the results of excavations as well as of the vast collections—revealing, incidentally, the care that has been bestowed on all aspects of the undertaking. Pending the comprehensive report now planned, *New Discoveries* is a useful, timely publication.

For those who are only vaguely aware of the wealth of information available on Jamestown, Cotter's reference to "a half-million artifacts" may prove startling. This is the largest collection from any seventeenth century Colonial site in North America, and it is the most important such material available because it has been obtained under controlled conditions.

*New Discoveries* will be indispensable to those concerned with the history and culture of New World colonies. Here are the material things, "large and small, of daily life at Jamestown in the seventeenth century"; they form "one of the finest groups of such early materials . . . assembled anywhere."

The virtual abandonment of Jamestown about 1700, together with the richness of deposits that accumulated during its first century, provide almost undisturbed sources for many aspects of its material history—in numerous instances, aspects nowhere else represented. It is now possible to begin to reconstruct the "conditions of life"

there. Few long-occupied settlements offer hope of comparably coherent, intelligible data for the reconstruction of historic events and trends. New data, provided by careful excavation, are here thoughtfully correlated with documentary sources. The physical structures may now again be visualized. Supplementing the record of such matters as use of the land and the arrangement of the apparently unplanned village, housing and transport, are the portable artifacts, which illuminate many other aspects of life there—not neglecting even public worship.

The present outline of new data for the simple—almost mediaeval—community which existed at Jamestown will be read with profit and pleasure by many, especially during the celebration of the founding of the settlement.

(Submitted with the permission of the Secretary of the Smithsonian Institution.)

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**SCAVI DI OSTIA I: Topografia Generale**, by GUIDO CALZA, G. BECATTI, I. GISMONDI, G. DE ANGELIS D'OSSAT, H. BLOCH. 248 pages, 53 figures, 59 plates, one plan in 15 sections. Libreria dello Stato, Rome 1953 18,000 lire

**SCAVI DI OSTIA II: I Mitrei**, by G. BECATTI. 153 pages, 25 figures, 39 plates. Libreria dello Stato, Rome 1954

Fifteen years ago, in the midst of the war, one of the most ambitious archaeological enterprises ever undertaken came to an end—the great excavation of Ostia, the port of Rome. Initiated in 1938 by Guido Calza, it had in four years more than doubled the area uncovered in the previous seventy years. True, the excavations were to be linked with a world exhibition and were therefore conducted with more speed than

one would have wished, but the result was the emergence of an ancient city which—in contrast to Pompeii—was a miniature replica of the capital of the world.

The volumes here reviewed open a series in which Ostia and all its monuments, not only the latest excavations, are to be published. The volume on the Mithraea gives a good idea of the scope of this project. The eighteen (or seventeen) Mithraea constitute one of the most important groups of monuments of this cult that has come to light. Becatti's treatment deserves the greatest admiration. Outstanding examples of his painstaking and at the same time imaginative approach are the interpretations of the Mithraea of the Terme del Mitra and of the *Planta Pedis*.

The first volume serves as a monumental introduction for all volumes to come. The late Guido Calza has provided a lucid account of the history of Ostia and of the excavations. The maps of nearly all ancient explorations are an especially valuable feature. At the beginning of Calza's activity stands the discovery of the fourth century *castrum*

in which he rightly saw the earliest settlement of the colony.

The second part of the volume consists of Becatti's skilful presentation of the urbanistic development of the city. This can be followed in detail, owing to the dating supplied by the study of building techniques and brick-stamps. Italo Gismondi, in his concise exposition of these techniques, gives us the benefit of his experience in all aspects of Roman architecture, so often successfully used in faithful restorations. His chapters are supplemented by a valuable appendix on the building materials by G. De Angelis d'Ossat. The complete lists of topographically significant brick-stamps primarily serve to document the account of the building history of the city.

Becatti's brilliant explanation of how Ostia was founded at the point where two ancient roads crossed can be as much recommended as his tale of the city's rise from humble beginnings to its peak of development under Hadrian—close to half of all the buildings excavated were erected under this emperor, who also realized grandiose

schemes of rebuilding entire quarters—and its gradual decline after the last third of the second century.

The rich illustrative material, and especially the magnificent plan of the city on a scale of 1:500, will be deeply appreciated. The Libreria dello Stato and its officials merit the highest praise for including this wealth of illustration, and in general for producing these two handsome volumes.

HERBERT BLOCH

Harvard University

**THE SEVEN CAVES.** *Archaeological Explorations in the Middle East*, by CARLETON S. COON. xx, 338, xvi pages, 39 figures, 31 plates, 3 maps. Alfred A. Knopf, New York 1957 \$5.75

With this book on Stone Age cave excavations Professor Coon makes common cause with such benefactors as Linda Braidwood, Gordon Childe, Mary Chubb, Agatha Christie Mallowan, Mortimer Wheeler, Leonard Woolley and others who answer the public's incessant cry for information about the absorbing world of archaeology. In



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plain English he gives a candid account of a series of investigations, in a lively narrative which touches the coasts of Tangier and the southern Caspian, the deserts and passes of Syria and Iran and the highlands of Afghanistan. While our guide makes good on his promise, nay his oath, to keep the instruction simple, he also makes us ponder the significance of what is being uncovered. He likewise gives us the charm of daily events in a succession of vivid episodes like Persian miniatures.

First there is homework in Chapter I: the evidence for cycles of geological change in the last hundred thousand years; shifts of flora and fauna, including humans; the concept of environmental stress and its effects on human events; the manufacture, typology and successive stages of Palaeolithic tools; the cave record of changes in industry and fauna and what they may imply. This lesson is completed in the last chapter by a review of what was found in the seven caves, of associated early human physical types, and of theories on their origins, migration routes and successive surroundings.

Each chapter describes how a cave was exploited and recorded. Step by step we follow the methods of locating and selecting sites, establishing routines, observing and handling materials, and the continual probing, collecting, assessing and re-assessing of fact. The author goes on to interpretations; and while certain generaliza-

tions may seem too sweeping and some conclusions too leaping, his account brims with useful information. The author has respected facts but chooses to see them at the dramatic end of the scale of interpretation. He removes the mystery from these things and takes everyone on a relaxed intellectual roller-coaster ride through the dogma, criticism and facts of prehistory toward numerous innovating ideas. Some of these, although undeniably profitable and stimulating, will need much testing against evidence, available and to come, before the final day of judgment.

Meantime, the worldly challenges of transport, housing, commissary and public relations, so closely intertwined with the cave work, are also described. The reader not only enjoys a wintry flight of geese, the bloom of pomegranates, the splashing fountains, but also gains glimpses of the mulish personalities of jeeps, of labor crises and inter-village feuds rooted in ancient ways, of ticklish bureaucratic nuances, of personal tragedy, human kindness, curiosity and endless humor, the same the world over. All this is brought into the tale just as it occurs: interrupting serious work with still more serious momentary dispute, cascading preposterous situations which then seemed all in the day's work. Now, at a distance, many appear grotesque but are also remarkable modern parallels to the age-old heroic tales—to Sorab and Rustum, the Shah-namah, Hajji Baba, Nasreddin Hodja and all the others.

These heart-warming anecdotes will bring laughter and nostalgia to those who have traveled and worked in the Near East; for others they will be a preview, a warning or a lure. Professor Coon is a physical anthropologist, a teacher of ethnology and material culture and a cave-digging archaeologist. These three facets of his single quest are all reflected in this rewarding book. As this review is written, one wonders what pungent new observations he may have as he returns from the Indian peninsula where he conducted a project in physical anthropology and where, by no accident, he found himself within call of an expedition engaged in hunting down the "Abominable Snow Man" in the Himalayas!

BRUCE HOWE

Peabody Museum  
Harvard University

**CASTLES OF THE MOREA**, by KEVIN ANDREWS. xxii, 274 pages, 231 figures, 40 plates. American School of Classical Studies at Athens, Princeton 1953 (Gennadeion Monographs IV) \$15.00

Greece is a land of stirring names—and not all are those of the "Golden Age." This small country's later history, though not happy, was full of interest and excitement. Slavs and Bulgars, Franks, Venetians and Turks clashed on its battlefields; their fleets attacked its shores. It is a long and complicated story which has often been told, but until recently not by disinterested parties.

Kevin Andrews does much to clarify a portion of it. His Introduction is a masterful summary of the whole stretch of mediaeval Greek history; in following chapters he takes up single events in the Venetian campaign, during the seventeenth century, to recapture Greece from the Turks. Taking as his point of departure a collection of plans of sixteen major fortresses located in the Peloponnesos, which were drawn up by Venetian engineers about the year 1700, the author analyzes each castle and gives an account of its history and its capture by the Venetian forces.

Although there is ample documentation the book could not have been prepared solely in a library. Months of work at the fortifications themselves are evident in the photographs and in the detailed descriptions. The volume

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Those who are interested in mediæval history, in Greece and in military architecture will find this book indispensable. Those who have yet to become interested in these matters will discover in *Castles of the Morea* an excellent introduction to a little known field. We might add a hope that the author, now equipped with unique knowledge of the subject, may go on to describe in another volume some of the many other interesting castles of Greece.

G. D. W.

**LES VANDALES ET L'AFRIQUE**, by CHRISTIAN COURTOIS. 455 pages, 12 plates. Gouvernement Générale de l'Algérie, Direction de l'Intérieur et des Beaux-Arts, Service des Antiquités. Arts et Métiers Graphiques, Paris 1955

The archaeological interest of this book is only incidental. The volume is a detailed discussion of the history of the Vandals, the best yet to appear. During the course of the discussion the archaeology both of Germanic prehistory and of Africa under the Vandal regime is skilfully used.

Despite the minuteness with which he examines disputed points and the fullness with which he considers all sides of certain questions, Courtois has done literary justice as well as historical to a fascinating story. The history of the Vandals is interesting in itself and important for an understanding of the latter days of the Roman Empire.

The story he tells is (briefly) this: The Vandals, along with the Suevi and the Alani, invaded Gaul at the end of A.D. 406. Little by little they made their way to Spain, but could find no respite

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there from the attacks of the Visigoths, who were urged on by the imperial government, until in 429 they went to Africa under the leadership of the able Geiseric.

In 435 they signed a treaty of *hospitalitas*, which gave them the legal right to take some of the land in a limited part of Africa (Tunis and Algeria in modern terms). In 442 they were given a treaty which recognized their control over the whole region; they were the first of the Germanic invaders to achieve such status.

Yet they left no permanent impress on North Africa. They were readily won over to the Roman speech and ways, apparently having not a single cultural trait of their own which could impress itself on the people they dominated. They governed only wholesale, as it were, interfering almost not at all

in minor matters and leaving the general structure of the country as they found it. In 533 they were easily conquered by the troops of the Eastern Empire and disappeared almost without trace, in sharp contrast with those Germanic invaders who remained in Gaul and in the main stream of history.

RICHARD M. HAYWOOD  
*University College  
New York University*

## BRIEF NOTICES

**MEMPHIS: THE CITY OF THE WHITE WALL**, by MARION T. DIMICK. Foreword by FROELICH RAINEY. 29 pages, 19 figures. University Museum, University of Pennsylvania, Philadelphia 1956 \$0.50

A brief history and description of the once splendid city, written by the wife of the field director of the University of Pennsylvania's excavations at Memphis in 1955, and accompanied by good illustrations which show what is left of the site today. Though meant primarily for the general reader, this charming account points up the woe-ful lack of up-to-date descriptions of other sites, especially Tanis, Giza, the necropolis of Saqqara, Heliopolis, Abydos and Assuan. The photographs will form a valuable document a few years hence if the present destruction of archaeological evidence continues.

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**L'ARTE DELL' ANTICA ETÀ DELLA PIETRA**, by PAOLO GRAZIOSI. xi, 287 pages, 38 figures, map, 300 plates (many in color). Sansoni, Florence 1956 15,000 lire

This magnificent publication is not intended to be either a treatise or a *corpus*, but rather to offer a general view of the earliest period of European art by means of reproductions of selected examples from the two great classes—carvings or incisions on portable objects and representations in painting, incision or sculpture upon the wall surfaces of caves or rock-shelters. In the text an introduction to the study of Palaeolithic art is followed by the discussion of the two classes of manifestations which are distributed through the Franco-Cantabrian and western Mediterranean areas, together with a few examples from Central Europe and Russia.

**PIPELINE ARCHAEOLOGY.** Reports of Salvage Operations in the Southwest on El Paso Natural Gas Company Project, 1950-1953. Edited by FRED WENDORF, NANCY FOX and ORIAN L. LEWIS. Introduction by JESSE L. NUSBAUM, and sections by fourteen contributors. xviii, 410 pages, 260 figures, frontispiece. Museum of New Mexico, Laboratory of Anthropology, Santa Fe, and Museum of Northern Arizona, Flagstaff 1956 \$4.00

An imposing source book of data on 312 sites in New Mexico, Colorado and Arizona which range in time from the pre-ceramic Basket Maker to the historic Acoma and Pueblo. As the editor

points out, none of the excavations was oriented toward a definite problem, but none the less, the contributions of fourteen archaeologists are significant in terms of the preservation of data which but for their efforts would have been destroyed and irretrievably lost.

**SPÄTHELLENISTISCHE BILDNISPLASTIK.** Versuch einer landschaftlichen Gliederung, by GERMAN HAFNER. 123 pages, 38 plates. Verlag Gebr. Mann, Berlin 1954 DM 27

The author groups about 130 late Hellenistic marble portraits according to the regions which produced them; his examples originate in the eastern Mediterranean in the period 100 B.C. to A.D. 50. In an appendix, the Virgil-Menander portraits are held to be copies of an original, perhaps representing Virgil and probably made in Athens in the first century B.C. Difficulties arise in trying to localize styles in a period when artists traveled so widely.

**SKARBY BRAZOWE z Epoki Wspólnoty Pierwotnej (IV i V Orkes Epoki Brązowej) w Wielkopolsce**, by WŁODZIMIERZ SZAFRAŃSKI. 300 pages, 55 plates. Polskie Towarzystwo Archeologiczne, Warsaw 1955 (Biblioteka Archeologiczna, Vol. 6)

This technical study, entitled *Bronze Treasures of the Epoch of the Primitive Community (IV-Vth period of the Bronze Age) in Great Poland*, presents a group of one thousand bronzes (fifty-seven hoards and ninety-nine isolated

finds) dating from the Late Bronze Age. These are important for the study of commerce and cultural relationships in East Central Europe on the eve of the Iron Age. A French summary makes possible its use by readers unacquainted with Slavic languages.

**SAHARA ADVENTURE**, by PHILIPPE DIOLÉ. 185 pages, 22 figures, 2 maps. Julian Messner, New York 1956 \$4.50

Neither science nor yet literature, this account of travels in the Sahara presents a highly subjective impression of the desert and of the remains of ancient man to be seen there. The photographs are interesting but not well reproduced.

**IL VOLTO DI TIBERIO**, Saggio di Critica Iconografica, by LUIGI POLACCO. xiii, 207 pages, 43 plates. "L'Erma" di Bretschneider, Rome 1955 4,000 lire

A comprehensive, fully documented study of the portraiture of the emperor Tiberius.

**THE LAST OF THE WINE**, by MARY RENAUULT. viii, 389 pages, 1 map. Pantheon Books, Inc., New York 1956 \$4.50

What was it like to compete in the Isthmian Games? To talk with Plato? To sail for Sicily with Alcibiades? We cannot really know, but this book almost makes us think we can. A successful and absorbing re-creation of an atmosphere so different from ours is a remarkable achievement. This novel is well worth reading.



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*Geometric bull from Boeotia. Seventh century B.C. Length 7 cm.*

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*Alexander with the lance. Found in Turkey. Hellenistic. Height 10.7 cm.*

*Mycenaean "stirrup" jar, ca. 1300 B.C. Height 10.5 cm.*

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